

ART. XIV.—REPORT UPON THE INSECTS COLLECTED BY P. R. UHLER DURING THE EXPLORATIONS OF 1875, INCLUDING MONOGRAPHS OF THE FAMILIES CYDNIDÆ AND SALDÆ, AND THE HEMIPTERA COLLECTED BY A. S. PACKARD, JR., M. D.

BY P. R. UHLER.

[PLATES 27, 28.]

LETTER OF TRANSMITTAL.

BALTIMORE, *January 1, 1877.*

DEAR SIR: The results of my observations and collecting during the two weeks that I was enabled, through your courtesy, to spend on the plains and mountains of Eastern Colorado, are embodied, as far as possible, in the following pages.

Although much hindered by rains, hail, and snow-storms, I was able to extend rapidly a series of collecting trips from Denver, and a few miles north of it as far as the Grand Cañon of the Arkansas River, a few miles west of Cañon City. In all the sections visited, I had no occasion to complain of the scarcity of insect life. Indeed, in such places as were moderately supplied with water, either in the cañons of the mountains or on the farms and lands adjacent to the creeks and irrigating canals, many kinds of insects were as abundant as we find them to be in corresponding situations in the Atlantic States. It was only in the perfectly desert spots which afforded no sustenance for vegetation that an absence of these creatures was to be noted. An examination of the country in and adjoining Denver, particularly on the west side, showed that the common weeds of the eastern division of the continent had already established themselves there, and that, as was to be expected, many of the common insects dependent upon them were present in abundance. On the open commons of the suburbs of Denver I was delighted to see large patches of showy flowers, and to observe how certain insects of similar colors flew to and rested upon them. Very conspicuously was this the case with a delicately blue *Lupin*, with fine large heads, which occurred in vast numbers near a mill-race running through a low part of the plains. Two species of the little bluets, *Lycana melissa* and *L. rapahoe*, settled upon these flowers, and when at rest were very difficult to recognize. *Danaï archippus* Cramer was widely distributed, except in the high mountains, and was generally observed to be mat-

ing. It was common in most places away from the mountains, but less common in Clear Creek Cañon, in the Ute Pass and adjoining gulches, and in the Cañon of the Arkansas. Specimens were to be seen along the route from Baltimore all the way to Kansas City; while in Eastern Kansas it seemed to be more abundant than anywhere else. On the treeless plains, it and all other large flying insects, excepting the grasshoppers and dragon-flies, ceased to appear until we reached the vicinity of water and cultivated lands, when it was again seen on the wing, flying with its wonted vigor.

In the Clear Creek Cañon and adjacent gulches, the large and showy *Papilio daunus* Boisd. was flying rapidly and agitatedly over the water, as if seeking for a plant upon which to deposit its eggs. One specimen was also noticed in the Ute Pass on August 13. All of them were too restless to admit of capture, and at no time were they within reach of my net. At the same time and in the first-mentioned place, *Pieris oleracea*, *Vanessa antiopa*, *Limenitis weidemeyeri* in very fresh condition, a large *Argynnis*, *Colias eurytheme*, and a small *Melitæa*, were either seen or captured. A very fine large *Satyrus* was tolerably common in Beaver Brook Gulch, and another species occurred in the gulch near Manitou. *Colias eurytheme* and *Pieris protodice* were abundant near Denver and even in the city, flying upon the flowers of an Euphorbiaceous plant which bears leaves margined with white.

Nothing was conducted with success in the station at the mouth of Beaver Brook, and, but for my short stay, great numbers and many species of Geometrids and other *Heterocera* might have been readily acquired.

Coleoptera of many species were readily taken both on the plains and in the mountains. Several kinds, such as *Epicauta ferruginea* Say, *Cicindela punctulata* Fab., *Chauliognathus basalis* Lec., *Eleodes obsoleta* Say, and *Asida opaca* Say, were found in almost all places on the plains at a short distance from the mountains. The former occurred in large numbers upon the flowers of *Helianthus* and other plants with yellow flowers, although in a few cases it was met with upon the white blossoms of the *Euphorbia*. *Cicindela punctulata* was common upon black muddy patches in Beaver Brook Gulch and in Clear Creek Cañon. It was very variable, and generally of the greenish color, with the white spots and lunules large. Specimens seen in and around Denver were all of the black-bronze type, with very small white markings. Those of the alkaline soils of the region near Cañon City were the most brilliant and highly metallic in their color. *Cicindela pulchra* Say was found singly upon blackish sand near the Arkansas River, August 11, at a distance of about one-half of a mile from the mouth of the Great Cañon. It was very wary, and of the variety with scarcely perceptible markings. *Chauliognathus basalis* Lec. was quite common upon sunflowers, chiefly upon the plains and near the foot-hills. It seemed to furnish about two distinct types, both of form and marking, the former having varieties

more numerous than the other. Those of Denver were generally large and stout, with the thorax longer, more rounded, and reflexed anteriorly, and with the discoidal black spot almost always broken into several parts, or divided down the middle. Those from Bijou were of the same type. The specimens from Colorado Springs and southward occurred almost invariably on a bushy weed bearing, densely packed, small yellow flowers. They were narrow, close-set, with the thorax truncated in front, and the anterior margin evenly turned up, the disk dull, the black spot entire and covering all but the margins, and with antennæ flattened. *Eleodes obsoletus* occurred under rubbish and dried dung, and around the base of Yucca and Cacti. It extended all the way from Denver to Cañon City on the hill-sides, and was most abundant between Colorado Springs and the Garden of the Gods. It was variable in all the localities, but most so near the last-named city. *Eleodes hispilabris* and *E. extricata* first occurred to me near Colorado Springs, and from thence extended southwardly to Cañon City. I did not meet with any specimens near Denver, nor at Golden, nor anywhere within the limits of the mountains. *Eleodes suturalis* Say was rare and found only near Denver. *Eleodes tricostata* Say was not seen elsewhere than between Colorado Springs and the Garden of the Gods; but the specimens found nearest to the mountains were more flattened, and had the costal margin of the elytra more prominently recurved. *Eleodes nigrina* Lec. was rare, and taken only in Manitou Park. Two specimens of *Asida elata* Lec. were found running among the grass in the evening twilight, the one near Colorado Springs and the other a short distance west of Cañon City. *Asida opaca* Say was tolerably common and quite variable in the width of its thorax and elytra and in the amount and prominence of the reticulations of the surface of the latter.

Of the *Erotylidae*, *Cypherotylus boisduvali* Chev., occurred only in Clear Creek Cañon. It was crawling on the surface at a considerable elevation above the bed of the creek, and in the midst of the pine woods, where there was bark and rubbish upon the ground. The closest scrutiny failed to detect more than a single specimen, and I was induced to believe that the season was too far advanced for its appearance in the usual numbers.

Meloidæ were not numerous in species, but *Epicauta ferruginea* Say was abundant everywhere, in the mountains and cañons and on the plains. The sunflowers and thistles were sometimes crowded with them, but generally only two or three were at once upon a single flower. It was very variable in size, ranging from 6 to 10 millimeters in length. Usually it affected the yellow flowers, which corresponded well with its color; but occasionally it was quite as abundant upon the white flowers of the *Euphorbia* and other similar plants. Dwarf specimens were quite common, and frequented the same places as the large ones. In this connection, however, it should be borne in mind that the summer was a remarkable one, with very variable degrees of tempera-

ture and moisture, and sudden changes of heat and cold. The driving storms of wind were very favorable to the wide distribution of insect life; but these winds were generally from the mountains toward the plains, and should have increased the fauna of the latter at the expense of the former.

No living specimens of *Cantharis nuttalli* were seen, but in Manitou Park a single dead specimen was found beneath a piece of wood.

In the mountain-gorges near Clear Creek Cañon and in Beaver Brook Gulch, various kinds of beetles were on wing in the sunshine, flying from the peaks above, and lodging on the sides of rocks, trees, and fallen wood. A few specimens of several species of *Cerambycidae* and *Buprestidae* were thus procured at the same time with grasshoppers, and beautiful red and steel-blue moths of the group *Zygænidæ*. The delicate and showy *Omoiala vermiculata* Grote was met with early in August in full daylight, flying over Clear Creek in the cañon, and also over Beaver Brook. Its flight was languid, but strongly reminded me of that of *Heliconia charetonia* Linn. It would sail about for a few minutes, and then lodge upon one of the willows or other bushes projecting over the rapids, and then take flight again, flying and resting at short intervals. At Bijou, a few beetles were taken, of species different from those found at either of the other stations which I visited. Among them *Pyrota engelmanni* Lec. was the most conspicuous. It was quite common upon the flowers of a Golden-rod, which grew low and bushy. Many pairs were seen and some taken while sexually united, the males being always smaller than the females.

In the same situations, as well as on the smaller sunflowers, *Epicauta pennsylvanica* DG., *Nemognatha immaculata* Say, and *Zonitis atripennis* Say were quite common. Most of these insects imbedded themselves in the pollen of the flowers, and flew from one to the other. They carried considerable quantities of the pollen upon their heads and wing-covers, and might readily have aided in the fertilization of those flowers.

A few specimens of *Euryomia inda* Linn. were buzzing near the ground in the vicinity of the railroad-track, not alighting for more than an instant at a time, and then off again in a tortuous line, as if they were bent upon searching the ground for lost treasure. Flowers of a few species were quite abundant in this region, and, upon every head, a beetle, fly, or wasp was settled, either buried in the mass of stamens and petals, or running rapidly over the surface.

Orthoptera of many kinds were very numerous at this place, particularly of the Grasshopper tribe. The large, lubberly *Brachyepelus magnus* Girard was abundant in several of its forms, and in all three of its states of color. It inhabits especially the undulated spots where the grass is taller, and often in the midst of the patches of low sunflowers. Many of the latter plants are no more than a foot in height, while bearing a flower as much as four inches in diameter. Upon one of these a large female of *Brachyepelus* crawled, and began to eat the petals of

one side. Continuing, it next ate into the mass of green seeds, chewing away with great rapidity; in one minute, it had consumed nearly a square inch, and when I returned to the spot in fifteen minutes, the grasshopper was still clinging to a fragment of the calyx, but every vestige of the flower had disappeared. This species did not occur in countless myriads as others of the grasshoppers; only a few were seen on a spot; at a distance of a few feet there were others, and so, over a surface of an acre, only a few hundreds were to be found.

Not so with the *Caloptenus spretus*, although in this neighborhood but a few stragglers were to be seen. In the mountains, however, south of Denver, such multitudes were flying that walking or riding was rendered almost unendurable by the continued thumps which one received upon the face. Buried in grasshoppers would have been almost literally true of my condition on the morning of August 16, when I walked from Colorado City to the mountains at Manitou. When I arrived in Denver, on August 4, sporadic examples of this insect were to be seen on the commons in the city and on the plains adjoining. The next day, and for several days afterward, no crowds had appeared in the near vicinity of this place. No swarms were flying over the lower section of the Clear Creek Cañon and gulches during August 6, 7, or 8. In the latter, single individuals would come flying down upon the mountain-sides from the higher levels, in company with, or at the same time as, other species, but never in multitudes. Nor were the nymphs of this species to be found in that locality. Of other kinds, chiefly *Ædipodas*, many young ones were hopping about in the paths and roads and in the woods among the rocks. Some of these were but slightly advanced in their larval stage, and were quite small. Others were almost ready to begin their final moult. The grass and Indian corn near Golden was still untouched, and the unusual amount of moisture had helped the crops to put on their healthiest covering of green.

After passing to the west of Pueblo, on the morning of August 10, I began to hear of the depredations of this grasshopper. As the train passed the corn-fields in the valley of the Arkansas, now and then a large field would be observed to have been stripped of its leaves, and in many cases the top would be bent over and broken. Often the stalk with a part of the tassel attached would be seen lying on the ground, where it had fallen after having been gnawed through, or snapped off by the numbers which had alighted on it. But the insects were not there; they had evidently flown off to other places. After arriving at Cañon City, and for the next two days, swarms of these insects were occasionally seen flying from the direction of the mountains. None of them, however, took the trouble to settle near the mountains; all went over, far aloft, and alighted five or more miles east of the city. In the mouth of the cañon of the Arkansas, there was much for them to eat, but only a few could be seen in places where the grass and weeds were dense and high.

Returning on the 12th of August, the valley of the Arkansas as far as Pueblo (how much farther I do not know) presented a scene of sad desolation. At all the lower levels, the floods had completed the destruction which the grasshoppers had partly effected, and left the farms with not one growing stalk, where a few days before broad tracts were covered with luxuriant crops. Perhaps half a dozen fields, chiefly a little higher and farther back from the river, were untouched; but nearly all the others within sight had been totally destroyed.

Arriving at Colorado Springs on the afternoon of this day, no indications of their ravages were to be seen. A few specimens could be noticed here and there, hopping about in the grass, and adjacent to the water-courses somewhat larger numbers were set in motion by the sweeping of my net. No complaint was being made of noticeable damage being done by them in this section, and no remark was heard relative to their appearance. The next day, at Manitou, they were seen hopping in great numbers, but no swarms were alighting from the air.

Ascending the mountains in the Ute Pass on the following day, the rocks in many places were observed to be almost covered with them, and their continued headlong descent from the elevated points above caused them to dash headlong against the faces and eyes of the drivers and horses, to the great discomfort of both. After reaching the Divide, they had ceased to be troublesome, and no more than single examples were met with on the mountains and in Manitou Park. In the mean time, heavy local showers of rain drenched the peaks and poured in floods through the gulches, drowning the insects or washing them away. Perhaps for that reason the grasshoppers had generally disappeared from the mountains when I returned through the Ute Pass. But a different scene presented itself when I arrived at Colorado City: the air was filled with the buzz of wings; the ground was everywhere covered with a leaping, struggling mass of grasshoppers. In some places, they were piled up several inches deep. Fresh hordes were continually arriving from the mountains. A dusky spot, several acres in extent, might be seen in the air high up, and in a few seconds the surface of the ground received new additions to the already countless numbers. Strangely enough, they were not universally distributed. Only a few localities west of the railroad were overrun by them, and several of these were covered with a luxuriant growth of weeds and wild flowers. Some of the corn-fields were not attacked, although only a few rods from the spots upon which they lodged. A few smaller swarms left the places upon which they first alighted, and flew off toward the southeast. Evidently, they were preparing to continue the species. Many of the males were chasing the females, and a few had already united in sexual intercourse. As my time for remaining in this vicinity was all exhausted at noon of the 17th of August, I did not have the opportunity to see many of them in the act of depositing their eggs; and during the next two days, which were spent near Denver, no swarms of the species appeared. Small numbers of

them were to be met with in the grass and tall weeds, but they showed no disposition to assemble or to fly in the air. In the region near Colorado Springs, their insect enemies were quite numerous. The *Tachina* and another kind of fly were observed in many instances balancing over a grasshopper that was trying to crouch in the thickest of the weeds and grass or to dodge sideways at each attempt of its enemy to reach it with her ovipositor. Immense numbers of the grasshoppers were lying dead upon the ground, perhaps crushed by the masses of their fellows that had crowded above them. The prodigious rapidity with which they sometimes strike the ground must cause the destruction of considerable numbers of them. Besides this, the local storms which arise from the mountain-region around Pike's Peak catch some of the swarms and dash them suddenly toward the surface and against the hill-sides. At this place also, the females were much more numerous than the males, and, in the cases that I was able to count them, the former were ten times as numerous as the latter. Several other forms of *Calopteni* also belong to the hills and depressions of the surface west of Colorado City, and still other species inhabit the various kinds of soils near Cañon City. *Caloptenus bivittatus* Say was moderately abundant near Denver, near Colorado Springs, and in the valley of the Arkansas. *Ædipoda carolina* Linn. was on the plains wherever I went.

Crickets were quite uncommon. Beneath stones and sticks near Colorado City, and in the mouth of the cañon of the Arkansas, a few specimens were found; but those from the first-named place were only half grown. A single specimen only was met with near Denver, and that one had taken shelter beneath rubbish in a garden. *Xiphidium* was very common in shrubby spots near the Platte River adjoining Denver; and *Æcanthus* was numerous at Colorado City and in the valley of the Arkansas.

Neuroptera and *Pseudoneuroptera* were seen in every locality, but my time was too limited to permit me to use it in chasing them. The few that I captured were usually such as flew near me, or settled upon the bushes and trees close by. On the dry sandy parts of the plains, two species of *Myrmeleon* were frequently around as I swept my net through the taller grass or flowers and weeds. In Clear Creek Cañon, *Æschna* of two species, a *Gomphus*, and two kinds of *Agrion*, occurred at occasional intervals between the ridges of the mountains. *Diplax semicineta* Say was present in large numbers upon a wet spot of ground west of Denver. Not being a very wild species, it was readily captured, and I was thus able to procure a fair series of them in their several varieties. *Hemerobius* was taken in Clear Creek Cañon; and, in the same place, as well as at Denver, a species of *Chrysopa* was quite common. *Chloroperla* was abundant in the mouth of Arkansas Cañon. *Diplax rubicundula* Say was noticed at various points on the railroad leading through Kansas, chiefly on wet spots upon the farms. In the same or similar localities, I noticed *Libellula pulchella* Drury, *L. basalis* Say, quite

numerous, and *Mesothemis longipennis* Burm. Several kinds of *Gomphina* and *Æschna* were also seen, but they could not be captured, and the species could not be recognized.

Diptera were very numerous everywhere, but a little less so in the cañons. Wherever flowers were in bloom, specimens were found resting upon or flying about them. *Bombylius*, *Anthrax*, and *Asilidæ* were seen in every locality; but on the sandy plains, where plants were numerous, they were astonishingly frequent. The colors and forms of most of these were quite attractive, and strongly set in relief by the green color of the plants; they added much to the lively effect of the scene. Some of the species did not extend south of Colorado Springs, while others were seen only in Clear Creek Cañon.

The beautiful *Ospricerus æacus* Wied. was met with singly in a few places south of the divide, but near Denver it was replaced by an *Asilus*, having a dull brown thorax, with four curving pale lines on the dorsum, with smoke-brown wings and short, slender, tapering antennæ, and with narrower wings than the preceding. Both of these forms are very attractive, and strongly resemble *Midas*, as well in their manner of flight as in the scarlet abdomen with red base and tip. When in repose, the red color of the body is concealed by the wings, but when flying it is very conspicuous and in strong contrast with all of its surroundings. I was much struck by the method which the former sometimes adopts to conceal itself from a pursuer. On a hill-side not far from Colorado Springs, I started a specimen while using my sweeping-net. At first, it rose three or four feet in the air, and then flew off with rather heavy but direct flight toward the thick patches of weeds and grass. As I noticed where it lodged and followed closely, it again rose and flew off to a distance of somewhat more than a rod. After repeating this three times, and finding itself still pursued, it flew to a lot of scattered stones, some of which were of a dark granitic rock, mixed largely with crystals of reddish felspar, and settled upon a dark spot of one of the pieces, which so well accorded with its color that only with great difficulty could I detect it.

Lordotus gibbus Loew was quite rare, being seen in only two or three places near Colorado Springs. The beautiful golden fur which covered its whole body shone with high luster in the sunlight, and foiled the yellow color of the sunflowers upon which it settled. A very beautiful *Mallophora*, coated with bright, silky, yellow plush, occurred sparingly in Beaver Brook Gulch. It was very fond of resting upon the rocks jutting over the road leading up the mountain. As disturbed by persons passing over the road, it would fly from rock to rock, and, when chased for the distance of a few rods, would fly off at a tangent, and return to the rock from which it first started.

A *Stenopogon*, allied to, if not identical with, *S. fasciatus* Say, was quite common upon sandy spots near Denver, and in Cañon City upon the banks of the Arkansas River. The places on which it settled corre-

sponded with similar ones on the shores of the ocean and bays of Maryland, where the *S. fasciatus* abounds.

The pretty *Odontomyia nigrirostris* Loew occurred singly upon the sunflowers at Colorado City. It sometimes remained over night upon the flowers, but was often seen flying toward them in the bright sunlight. Other species were taken in the same locality, most of which were not nearly so numerous as the first mentioned.

Mosquitos were very numerous on plants in marshy situations and near them, particularly in the western suburbs of Denver.

Muscidæ were tolerably common in houses; but several forms of *Sarcophaga*, *Desia*, etc., were distributed all over the more fertile parts of the plains and cañons.

Tipulidæ were scarce in every locality that I visited. Several very neat forms of *Trypeta* were common on the plains in the vicinity of water.

Of all the orders of the insects, none were more abundantly and conspicuously represented than the *Hymenoptera*; although of one or two families, such as the Saw-flies and *Uroceridæ*, not a single example was seen. *Cynipidæ* were very scarce, and represented only by a few small galls upon stunted oaks near Manitou. Ants were numerous; the ground in loose soils at the mouth of the Cañon of the Arkansas was everywhere undermined by a species with a red head. A species closely resembling *Formica rufa* makes hills of sand on most parts of the plains within a few miles from the mountains. They construct hillocks ranging in height from 9 inches to 1½ feet, and from 2 to 3 feet in width at base. These nests are dome-shaped, constructed of the soil brought from beneath the surface, and covered on the outer surface with waterproof clay-earth, cementing variously colored pebbles all over the surface. Their appearance is sometimes that of a loosely made mosaic, and is very conspicuous in some places, owing to the different colors of the pebbles and bits of minerals used in construction. In general, the entrance-holes are situated on the side away from the mountains, usually on the southeast side, opposite the direction of the prevailing rain-storms. Some of them were placed quite near the prairie-dog mounds; but in no instance did I observe any of them to be connected with them. Occasionally a gopher-burrow may be seen to penetrate one of the ant-hills, and in all such cases I could not detect the presence of the ants. They were in no wise different from the others, which were abundantly peopled by the ants. But as other hills were found destitute of ants, I presumed that these had also been deserted before being occupied by the gophers.

In this connection, although they do not belong to this order, it may be not amiss to speak of the white ants. They were found abundantly beneath loose bark in the region near Cañon City, but more particularly under stones on the hill-sides adjacent to Colorado Springs. All the sexes and forms were present in the unwinged stages. Nymphs of males and females had rudiments of the wing-cases, but none had

reached maturity. The species was very similar in size and appearance to *Termes flavipes* Kollar; the color yellowish-white, and the head and pronotum narrower than in that species.

At Cañon City, a beautiful honey-bee, *Apis fasciata*, was moderately common upon the flowers of a great variety of plants. It struck me as an interesting fact that in no single instance was this insect to be seen upon the flower of *Helianthus*, although I examined every flower of this kind that was in bloom over a tract of surface two miles long by more than a quarter of a mile wide. In no other place did I meet with a single specimen of honey-bee of the genus *Apis*. Humble-bees were very rare; the only one seen was a rubbed specimen of *Bombus ternarius* Say, flying in Beaver Brook Gulch. There was, however, a rich representation of forms in the genera *Melissodes*, *Megachile*, *Anthidium*, *Colletes*, etc. Some of the smaller *Apidæ* were extremely abundant, and at least one form was found in each locality. They all frequented the flowers, being most abundant upon the plains in places where the plants were numerous and of various kinds. The great heads of small pink flowers of the *Polanisia* were sometimes swarming near Denver with several varieties of *Aculeata*, such as *Priononyx*, *Myzine*, *Polistes*, etc. A new species of *Panurgus*, about one-fourth of an inch in length, with slender yellow bands across the abdomen, lodged on the white flowers of the white-bordered *Euphorbia* near Denver, being found nowhere else. While another species of that genus, of a little larger size, and having interrupted whitish bands across the abdomen, was equally common at Cañon City upon another totally different looking Euphorbiaceous plant, but was not seen north of this place. So many forms of both plants and insects are found only in the one or other of the two regions north and south of the divide—as, for example, the one represented by the vicinity of Denver, and the other by the country around Cañon City—that I am induced to believe that they constitute parts of distinct areas of distribution.

Permit me to remark, in conclusion, that the parts of Eastern Colorado, within the reach of irrigation, might be made the greatest honey-producing garden of this continent. The great numbers of bee-like *Hymenoptera* already there, and the astonishing variety and abundance of flowering plants, growing even upon the almost arid soils, point to this as the natural home of the bee-culturist.

Very respectfully, yours,

P. R. UHLER.

Prof. F. V. HAYDEN,
U. S. Geologist-in-charge.

HEMIPTERA.

HETEROPTERA.

Fam. CORIMELÆNIDÆ.

CORIMELÆNA White.

C. nitiduloides.*Cimex nitiduloides* Wolff, Icones Cim., 93, pl. x, fig. 92.

During the month of August, a few specimens of this insect were found near Colorado Springs, concealed among the roots of Yuccas and of other plants growing on the plains near the foot-hills. The season was particularly rainy, and snow or hail occasionally succeeded the thunder-storms. Sudden cold had the effect to chase many insects into sheltered places, and the dense leaves and roots of the grasses and Yuccas afforded an ever-present shelter to many kinds of beetles and bugs.

Fam. PACHYCORIDÆ.

HOMÆMUS Dallas.

1. *H. ceneifrons*.*Scutellera ceneifrons* Say, Long's Exped., App., 299, No. 2.

Specimens were swept from the rank, growing weeds skirting, or not remote from, the water-courses. West of Denver, they occurred in swampy spots near the South Platte River, and on the high table-land near the foot-hills, where the irrigation-trenches water the farms. A few very clearly marked specimens were beaten from bushes in Beaver Brook Gulch and in Clear Creek Cañon.

In general, these western mountain specimens are not so dull colored, nor so broad, as those which occur on the eastern side of the continent.

2. *H. bijugis*.*Homæmus bijugis* Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, 393.

Not uncommon in the city of Denver, particularly on rank-growing plants in damp situations.

Subfam. EURYGASTRINÆ.

EURYGASTER Lap.

E. alternatus.*Tetyra alternata* Say, Amer. Ent., tab. iii, p. 43, fig. 3.

Common in Colorado, in September, in the region of the foot-hills. Baron Osten Sacken collected a specimen in the Yosemite Valley, California, in June, and another at Los Angeles, California, in March. The species varies much in the amount of dark clouding and marbling on the scutellum and corium, and also in the size of the dark spots on the connexivum.

Summary of the Cydnidae of North America.

Fam. CYDNIDÆ.

Form generally oval, suborbicular, or quadrangularly elliptical; head clypeate, semicircular; antennæ of five joints (exceptionally of four), which are loosely united by slender threads between the second and third, third and fourth, and fourth and fifth joints, inserted under the flat margin of the sides of the head; rostrum of four joints, the second of which is usually compressed; scutellum either broad and bluntly rounded or triangular, with the apex pressed down; tibiæ beset with stout spines, generally fossorial; the first ventral segment very narrow, generally occult. Color generally black, or piceous.

I. Tribe CYDNINI.

Femora compressed; tibiæ closely armed with stout spines, the anterior pair more or less compressed; the tarsi slender, filiform.

Scheme of genera.

I. Scutellum triangular, convex:

Head with erect, submarginal bristles, or teeth:

Body very deep and convex:

Ostiolar canal fusiform..... *Cyrtomenus*.

Ostiolar canal a long gutter..... *Amnestus*.

II. Scutellum broadly rounded:

Head with comb-teeth:

Body deep and convex:

Ostiolar canal obsolete, sulcate, with raised margins; surface closely hairy..... *Trichocoris*.

Ostiolar canal short, at tip enlarged into a circular auricle; surface hairy exteriorly..... *Microporus*.

III. Scutellum triangular, narrow at tip:

A. Head with submarginal comb-teeth:

a. Pronotum, collum with an impressed, submarginal, deeply arcuated line:

Ostiolar canal reaching almost to the outer end of the episternum, flat, clavately rounded at tip.. *Macroporus*.

Ostiolar canal short, ligulate, obliquely indented next the tip..... *Homaloporus*.

Ostiolar canal half the length of episternum, flat, fusiform, scale-like behind, oblique at tip; pronotal submarginal line obsolete..... *Æthus*.

b. Pronotum without the arcuated line:

Ostiolar canal short, narrow, subfusiform, with the ostiole at tip..... *Rhytidoporus*.

Ostiolar canal obsolete, shorter than the coxa, narrow-ligulate..... *Cryptoporus*.

B. Head destitute of submarginal teeth :

Ostiolar canal fusiform, rather flat, transversely incised next the tip; pronotum with an impressed sinuated antero-marginal line.....*Pangæus*.

Ostiolar canal long, spatulate, but broad and rounded at tip; pronotum without the sinuated line....*Melanæthus*.

Ostiolar orifice at the inner end of an oval scale, which is placed, exteriorly on the episternum.....*Lobonotus*.

CYRTOMENUS Amyot & Serv.

Form oval, deep, very convex in all its diameters. Head strongly clypeate, the cheeks lamellate, bilobate, with the margin abruptly recurved; the submargin with comb-like, erect teeth, and with long, remote bristles; the surface obliquely ridged and grooved, and the ocelli large; second joint of antennæ much shorter than the third, fourth and fifth stouter, ovate, moniliate. Pronotum transverse, strongly convex, with the lateral margins recurved, the anterior submargin with an arcuated, abbreviated impressed line, in front of which the margin is thick and raised; a transverse deeply impressed line on the middle, abbreviated near the margins, divides the surface into two almost equal parts. Prosternal flaps lamellar, high, lunate; odoriferous canal not half the length of the episternum, fusiform, with a small auriculate appendix at the tip; tibiæ all compressed and distinctly curved, the spines and teeth of the outer surface stout, and the latter set in prominent wavings of the surface; interior margin of the anterior coxæ prominently, archedly carinate. Scutellum convex, a little longer than wide, a little contracted at tip, but not narrow, bluntly rounded. Corium wide, blunt, obliquely subtruncated on the posterior margin, the costal margin broadly curved, the edge thick for more than half its length, ciliated; epipleura wide, a little more than one-half the length of the corium, longitudinally scooped out, suddenly narrowed before the tip, the tip slender, acute.

1. *C. mutabilis*.

Cydnus mutabilis Perty, Delectus Anim., art. 33, fig. 6.

Cyrtomenus castaneus Amyot & Serv., Hemipt., 91, No. 1.

Chestnut-brown, or rufo-piceous, obese, suborbicular, bristly about the sides, on the margins, beneath, and on the legs and rostrum; the surface smooth and highly polished. Head semicircular, emarginated in front, paler anteriorly, the surface uneven, with a few irregular, indented points, and on each side with a series of oblique ridges and depressed lines between them; the lateral lobes broadly depressed anteriorly, with the margins strongly recurved and ciliated with ferruginous bristles, their interspaces with indented points; tylus shorter than the lateral lobes, tapering toward the tip; base of head tumid, highly polished, minutely and obsoletely wrinkled and punctured; ocelli very near

the eyes, reddish-orange, or pale red; antennæ pale ferruginous, the second joint very short and slender, third fusiform, stouter, rather longer than the fifth joint, fourth and fifth ovate, the fifth a little longer than the fourth; rostrum pale ferruginous, reaching to the posterior coxæ, the basal joint with fine pubescence, second joint as long as the third, curved, broad, compressed, ciliated with long bristles, third joint compressed, a little wider toward the apex, carrying a very few shorter bristles. Pronotum deeply sinuated to admit the head, the lunate impression adjoining the anterior margin densely charged with coarse, deep punctures, which become less dense exteriorly; the submargin opposite the middle of the eye with a coarse puncture carrying a long bristle; the lateral margins slightly oblique, curving inward at the anterior angles, beset with thirteen or fourteen coarse punctures, each carrying a bristle, the edge recurved; posterior margin moderately arcuated, very smooth, feebly scooped out next the humeri, the humeri a little humped, the angles rectangular and a little rounded; transverse dorsal line wide and deep, lunately impressed each side, charged with rather remote, but very coarse, deep punctures, which scatter into irregular series behind the line, aggregate each side, and are thence continued forward to a patch of denser and finer punctures behind the anterior angles. Scutellum with remote, irregularly placed, coarse, deep punctures, those of the exterior submargin denser, and almost in contact with a marginal sutural series of denser and finer ones which extend not quite to the tip; the base with an impressed line having close, fine, dragged punctures; tip smooth, depressed, blunt, impunctate. Legs pale ferruginous, the spines and tips of femora piceous, tarsi pale yellow; the anterior tibial teeth eight in number, the two basal ones very slender, the others very stout and blunt. Corium highly polished, coarsely distinctly punctured in the sutures, excepting the costal and the one bounding the discoidal areole exteriorly; the costal suture with series of obsolete punctures, punctures becoming fewer and less coarse posteriorly, behind the middle, exteriorly, to the tip almost impunctate; costal margin scooped out at base, and from thence to the middle with a series of six to eight coarse punctures, each carrying a bristle; clavus long and narrow, bounded at base on the inner margin with a single series of distinct punctures, and on the outer margin beginning with a double series, but continuing with a single series of punctures to near the tip of the suture; membrane pale, charged with about ten radiating nervures. Disks of the episterna corrugated, dull, the outer section areate and highly polished. Venter polished, paler than the upper surface, ciliated on the lateral margin with long, remote bristles; base of the first segment rastrated longitudinally each side; disks of the second, third, and fourth segments each with a series of remote, coarse punctures bearing bristles; base a little inflated in the middle.

Length $6\frac{1}{2}$ -9 millimeters. Width of base of pronotum $4\frac{1}{2}$ - $5\frac{1}{2}$ millimeters.

Inhabits South Carolina, Georgia, Florida, Guiana, and Brazil.

This species has not yet been brought from Texas or the region west of the great plains unless the next species shall prove to be a form of it. The differences separating them seem ample, but long series from many localities may yield the intermediate links.

2. *C. obtusus*, new sp.

Form of the preceding; colors generally a little darker. It differs in having a shorter and more blunt head, more deeply emarginate in front, and the lateral lobes more widely rounded and recurved. Punctures less numerous on the disk and sides of the pronotum, the lateral margins almost sinuated, the lunate impression behind the head narrower; scutellum very coarsely and sparingly punctured and destitute of punctures near the base; anterior tibiæ with ten stout teeth, rostrum reaching between the posterior coxæ almost to their posterior extremity. The remaining characters are not different from those of the preceding species.

Length 8-9½ millimeters. Width of base of pronotum 5-6 millimeters.

From Texas, Arizona, Mexico, and perhaps the same as that from Cape Saint Lucas, Lower California. Many of the specimens which I have inspected show conspicuously the results of wear upon the bristles of the head and teeth of the fore tibiæ. In two individuals, these appendages were entirely broken off and the bases worn.

AMNESTUS Dallas.

Subquadrangular; moderately deep, more convex beneath than above. Head very small, semicircular, longer than broad, the margin armed with a few very stout, short teeth, of which four are placed on the tip of the tylus; tylus longer than the lateral lobes, ridged and long; eyes large, prominent; ocelli large, placed near the eyes. Antennæ of five joints, the basal one short, the second very short, slender, third about as long as the fourth, tapering toward the base, much longer than the second and basal together, fourth and fifth long fusiform, very slenderly articulated. Rostrum long and slender, inserted close to the apex of the head, the basal joint shortest, second and third much longer, about equal, the fourth more slender, shorter than the third; bucculæ composed of a rounded, short plate each side, extending back but a little more than half the length of the throat. Prosternum elevated, bounded each side by a broad, arched plate, the central gutter broad and concave. Pronotum subquadrate, a little wider than long, convex on the disk in front, with the anterior angles broadly rounded, the transverse impressed line placed behind the middle. Ostiolar canal slender, extending almost to the outer margin of the episternum, grooved, with the sides carinately elevated. Scutellum triangular, subequilateral, almost acute, the tip not distinctly contracted. Legs rather slender, not heavily spined, the anterior tibiæ compressed, armed with a single row of stout teeth on the

outer edge and with a few more slender and very oblique teeth on the under side near the inner margin (anterior femora sometimes with a stout tooth near the base, bifid at tip). Corium broad and short, sinuated on its posterior margin, the costal margin arcuated posteriorly, the epipleura slender, but protracted almost to the tip of the corium; membrane long, with three or four longitudinal indistinct nervures.

1. *A. spinifrons*.

Cydnius spinifrons Say, Journ. Acad. Phila., iv, 316, No. 2.

Chestnut-brown; oblong-subquadrate. Head longer than wide, coarsely, unevenly punctured, ciliated and tuberculated, the tylus prominent and convex, carried back narrower almost to the base of the head. Antennæ, rostrum, and legs pale ferruginous, the former slender and long, the basal joint a little longer than the second, which is very short and slender, third slender at base, but gradually enlarging toward the tip, longer than either of the others, and about equal to the second and fourth united, the fourth and fifth subequal, attached by very slender bases. Rostrum reaching up on the posterior coxæ, becoming slender toward the tip, the basal joint longer than the head, second a little longer, hairy, very slightly compressed, not much stouter than the third, third much longer, fourth slender, a little shorter than the second. Pronotum subquadrangular, the lateral margins straight and parallel, the anterior margin not deeply sinuated next the head, edged with a narrow, smooth seam, the angles bluntly rounded; posterior side a little arcuated, the margin high and convex, a little sinuated interiorly to the prominent, smooth, humeral angles; the surface polished, variolously, closely punctate behind the transverse line, a little more finely and densely so each side and behind the head; disk of the anterior lobe very finely and sparsely punctate, and the posterior submargin with finer and remote punctures; the sides remotely ciliate. Anterior tibiæ with five stout piceous teeth and four finer ones on the outer edge; posterior tibiæ long, very slightly curved, slender, armed with few and slender spines. Pro- and meso-pleuræ pale chestnut-brown, highly polished; ostiolar canal very high, narrow, and long, placed on a dull, dark, rugose episternum. Scutellum convex, remotely, moderately, coarsely punctate. Corium highly polished, a little paler than the pronotum, coarsely, deeply, closely punctate, excepting on the middle of the posterior submargin and discal areole; punctures of the clavus-sutures finer; membrane white, protracted much behind the abdomen. Venter pale, minutely, densely scabrous and closely pubescent. Epimera of the metastethium produced backward over the base of the abdomen in smooth, triangular flaps.

Length 4 millimeters. Width of base of pronotum 2 millimeters.

Occurs in many parts of the United States. Mr. Say found it first in Missouri; since then it has been brought from Texas, Illinois, Indiana, Michigan, Pennsylvania, and Georgia. I have found it twice in Mary-

land, once near Baltimore in a loamy valley, beneath decaying wood, on the 18th of March. More than one-half of the specimens which have passed through my hands have been destitute of the forked tooth beneath the anterior femora. Those which possessed it have all been females.

This very novel form of *Hemiptera* deserves further notice. Almost nothing is known of its habits, and not enough of them in any of their stages have yet been collected to determine the meaning of their singular and elaborate structure.

2. *A. pusillus*.

Amnestus pusillus Uhler, Bull. U. S. Geol. Surv., 2d ser., vol. ii, No. v, p. 12.

This a small, pale, species, often common in many parts of the Atlantic region. In the Black Mountain range of North Carolina, and in Tennessee, it has been met with in large numbers. It seems to be less convex above than the preceding species, and more uniformly punctured, and no specimens have yet been seen to have the forked tooth on the anterior femora.

TRICHOCORIS Uhler.

Oval, convex, hirsute, very convex beneath. Head bluntly semicircular, deeply seated, the anterior angles of the pronotum protracted to the middle of the eyes. Eyes sunk to the middle in the margin of the head; the ocelli placed near to them and on a line with their base. Clypeal submargin with erect, blunt teeth; the tylus broad, flat, defined almost to the base of the cranium; the lateral lobes longer. Rostrum reaching behind the anterior coxæ; the basal joint as long as the head inclosed by the bucculæ; the bucculæ gently arched, a little wider than the rostrum, and extending almost to the base of the head; the second joint longest, a little bent, arched, and compressed; the third a little longer than the fourth. Prosternum raised, broadly scooped out, the sides with prominent, lunate, obliquely placed lobes, which almost inclose the base of the antennæ. Xyphus of the metasternum triangular, acute at tip, sunken in the middle. Ostiolar canal rather flat, placed close to the suture between the meso- and meta-stethium, running outward more than half the length of the episternum, slenderly sulcated on its posterior margin, slightly tubular at the outer end; the plate on which it is set is narrow, acutely triangular beyond the ostiole. Scutellum about two-thirds of the length of the abdomen, broad and longer than broad, wide, blunt, and not obviously contracted at tip, remotely bristly. Hemelytra a little wider than the abdomen, shorter than the scutellum, the costal margin broadly arcuated, the posterior margin of the corium bluntly oblique, slightly sinuated; epipleuræ long and narrow; membrane scarcely extending beyond the abdomen, directed obliquely downward when closed. Legs stout; tibiæ with numerous long stout spines and bristles, the anterior pair moderately

compressed, subtriquetral when viewed from the edge. Venter obesely convex, the segments beset with long, remote bristles; connexivum compressed, sharp-edged, interrupted at the incisures, closely ciliated.

T. conformis.

Trichocoris conformis Uhler, Bull. U. S. Geol. Surv., vol. ii, No. v, p. 11.

Oval, blackish-piceous, moderately convex above, hirsute, with long, close, ferruginous hairs, those on the sides more dense; the sides almost parallel. Head flat, coarsely punctate in more or less oblique lines, or irregularly punctate and wrinkled, clothed each side with long, remote, erect hairs; teeth of the submargin close-set, short, erect; the tip of the tylus armed with two teeth; apex of the clypeus quadrately emarginate; lateral margin and eyes reddish-brown. Antennæ rust-brown, the basal joints tinged with piceous, the third, fourth, and fifth joints particularly clothed with fine yellow pubescence; basal joint barely reaching the tip of the head; second more slender, shorter, and more slender than the third; third somewhat long, gradually wider toward the tip; fourth and fifth subequal, long ovate, stouter than the third. Rostrum ferruginous, tinged with piceous, reaching behind the intermediate coxæ. Pronotum blackish-piceous, almost twice as broad as long, sometimes tinged with rufo-piceous on the lateral margins, the anterior angles curved forward, a little rounded, the lateral margins straight, a little oblique, the edge sharp, slanting downward, densely clothed with long ferruginous hairs; posterior margin subtruncate, the angles almost rectangles, a little rounded; surface variolously punctate on the posterior lobe and sides, the punctate portions invested with close, long hairs; the anterior lobe almost bald and destitute of punctures. Pronotum with coarse, irregularly placed, mostly remote punctures, those of the sides confluent in a broad, depressed line next the margin. Sides of the prosternum anteriorly a little raised; medio- and post-pectus coarsely, remotely punctate. Corium broad, broader behind, finely, remotely, obsoletely, on the exterior area more densely and deeply, punctate, invested with long, remote hairs; the lateral edge densely hirsute; membrane brownish. Legs rufo-piceous; the tarsi ferruginous and very slender, the second joint being very small; anterior femora on the upper side and exterior to the middle line with a series of broad, shallow pits; the femora and tibiæ ciliated with long ferruginous bristles. Venter obesely convex, polished, invested with long ferruginous bristles, finely, remotely punctate; sides of the segments more closely punctate, and with a submarginal series of variolose punctures; the disk broadly impunctate.

Length $5\frac{1}{2}$ – $6\frac{1}{2}$ millimeters. Width of base of pronotum 3 – $3\frac{1}{2}$ millimeters.

From California, and from near San Francisco.

This form is much more hairy than any other that has thus far been found upon this continent, and that character will at present readily

enable the student to recognize it at first sight. Its general affinities seem to be with *Æthus* as understood by Mr. Dallas, but more minute examination of its details readily shows its distinctness from any genus hitherto established.

MICROPORUS Uhler.

Ovate or oval, broad, round, deep, hairy, polished. Head broadly rounded, feebly convex, the tylus shorter than the lateral lobes; submargin closely set with short, stout teeth and long bristles, the edge sharp, recurved, broad beneath. Antennæ, basal joint barely reaching the tip of clypeus; second very short, only a little more than one-half the length of the third; the third more slender, fusiform, shorter than the basal, but about of the same length as the fourth; fourth and fifth stouter, rounded at each end, subequal. Rostrum reaching between the intermediate coxæ, the second joint longest, compressed, arched above, a little curved; third and fourth joints subequal, each a little shorter than the basal one, the bucculæ narrow, a little arched anteriorly, protracted narrower almost to the base of the head. Pronotum transverse, the transverse impression indistinct, the surface arching in conformity with the curve of the head, the anterior angles a little produced, rounded, the anterior margin deeply sinuated, the lateral margins fringed with long ciliæ. Anterior femora compressed, armed with stout spines on the outer and inner edges, those of the tip longest. Ostiolar canal short, placed very near the sternum, the inner end a tapering ridge, the outer end a rounded button sunken in the center. Scutellum about two thirds as long as the abdomen, bluntly triangular, wide, and rounded at tip, the apex a little bent down. Corium short and wide, the outer angle produced backward, the epipleura long, grooved. Outer margins of the venter compressed.

1. *M. obliquus*.

Microporus obliquus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 394.

Chestnut-brown, polished, subovate, the lateral margins of pronotum and corium fringed with long ferruginous hairs. Face almost flat, each side with long, oblique, punctured striæ; the tylus transversely and less distinctly grooved; anterior margin bluntly rounded, the submargin thickly set with short, stout teeth, and with a few long bristles between them; the lateral lobes sparingly punctate, with a round fovea adjacent to each eye, and another near the tip, each side of the tylus. Rostrum yellow, extending to the intermediate coxæ, the apical joint slender, a little shorter than the third, the third gradually widened toward the tip. Basal and next joint of the antennæ slender, the second shortest, third, fourth, and fifth moniliate, narrowed at the ends, the apical one a little longer than the fourth, the third and fourth subequal. Base of the head convex, impunctate. Pronotum transverse, the lateral margins oblique, densely ciliate with ferruginous bristles, the anterior angles a little advanced, rounded; anterior divis-

ion of the surface impunctate, excepting along the middle, in the lunate impression, and on each side; surface behind the transverse impression coarsely, not densely, punctate, the posterior submargin and humeri impunctate, the posterior margin deflexed, a little arcuated, and feebly sinuated before the humeral angles. Anterior tibiæ armed on the front margin with long and very stout spines; tarsi pale yellow. Scutellum polished, remotely punctate, the base almost destitute of punctures; tip a little depressed, bluntly and angularly rounded. Hemelytra remotely, finely punctured, those of the apical portion becoming finer and almost obsolete; the costal margin broadly arcuated, ciliated at base with long bristles; membrane and wings milk-white. Venter smooth in the middle, sides minutely scabrous; anal segment punctate; the lateral margins fringed with long hairs.

Length $4\frac{1}{2}$ millimeters. Width of base of pronotum $2\frac{1}{3}$ millimeters.

Obtained at Ogden, Utah; also collected in Central Texas by G. W. Belfrage, and by myself west of Denver, Colo.

2. *M. testudinatus*.

Microporus testudinatus Uhler, Bull. U. S. Geol. Surv., 2d ser., vol. ii, No. 5, p. 10.

Ovate, broadly rounded, more convex than the preceding species. Head slanting in conformity with the curve of the pronotum; the anterior margin broadly recurved and rounded, feebly emarginate in front, the submargin with long setæ and stout, close teeth, of which two are on the tip of the tylus; surface smooth, polished, impunctate; an impressed point each side near the eye, and each side of the tylus is an oblique impressed line; tylus shorter than the lateral lobes, the latter bluntly rounded and obsoletely wrinkled. Antennæ pale ferruginous, the second joint slender, much the shortest, cylindrical; the third, fourth, and fifth subequal in length. Rostrum reaching upon the intermediate coxæ, pale ferruginous, the third and fourth joints subequal, together longer than the second. Pronotum transverse, in front much narrower than behind; the anterior margin deeply emarginated to receive the head, the angles moderately protracted forward, bluntly rounded; the lateral margins steep, the edge very thin, convexly arcuated, closely fringed with long ferruginous hairs; posterior margin feebly rounded, the exterior angles rectangular, a little rounded; surface smooth, polished, obsoletely punctate each side and behind the middle, the anterior division smoother, and with a very few minute punctures; behind each eye is a sunken point, and across the middle a series of six similar points. Pectus pale piceous, the disks of pleural pieces darker. Legs pale ferruginous, more or less tinged with piceous; the spines blackish piceous; femora compressed, having two rows of punctures carrying ciliæ; spines of the outer margin of anterior tibiæ longer, the submargin with a slender groove bearing coarse punctures; the posterior tibiæ long, feebly curved, hardly thicker toward the end; the tarsi slender, yellow; the intermediate joint small. Scutellum very broad, polished,

convex, remotely, finely, obsolete punctate, the tip broad. Corium short and wide, the costal margin arcuated, rather uniformly, deeply punctate, the sutures punctate in series, the subcostal linear impression continued to beyond the middle and coarsely punctate; membrane short, broadly rounded, pale brownish. Venter very convex, polished, ciliated across the segments, and with bristles on the outer edge of the connexivum; the lateral and posterior surface minutely punctate.

Length $4\frac{1}{2}$ millimeters. Width of base of pronotum $2\frac{1}{2}$ millimeters. Width of venter 3 millimeters.

Inhabits California and Mexico.

MACROPORUS Uhler.

Broadly oval, feebly convex; the sides of the head and pronotum sparingly ciliated. Head broad, clypeate; the margins broadly reflexed; the submargin armed with short, erect teeth; the tylus flattened, a little narrowed at tip, the recurved margin crossing its tip; bucculæ almost percurrent, narrow, nearly straight, not expanded at tip. Rostrum reaching between the intermediate coxæ; the basal joint a little shorter than the bucculæ; the second long, rather shorter than the third and fourth united; the two latter subequal. Antennæ, basal joint not quite reaching the apex of the head; the second more slender, very short; third longest, gradually enlarging toward the tip; fourth and fifth subequal, each a little shorter than the third, moniliate, long-ovate. Pronotum transverse, subquadrate, the sides oblique, narrowing toward the front, remotely ciliated, and curved inward toward the acute anterior angles; the edge recurved; the anterior margin deeply sunken to receive the head; the submargin with an impressed line running parallel to the margin, and bounding a rim-like collum; the posterior margin a little arcuated, the angles rectangular, the humeri not prominently elevated, and without a sinus on the adjoining margin; the surface almost destitute of the transverse, impressed line; behind each eye with an excavated point. Ostiolar canal very long, slender, flat, reaching almost to the outer margin of the episternum, slenderly grooved and carinate; the tip thickened, widened, and rounded. Scutellum short, almost as wide as long; the tip narrow, obliquely rounded, not extending beyond the inner angle of the corium, the sides near the tip very feebly sinuated. Prosternum but slightly elevated; the lateral lobes blunt, drawn down in front, and transversely indented there. Anterior tarsi moderately flattened, few-spined. Corium broad, reaching to the penultimate segment of the abdomen; the costal margin broadly arcuated near the tip; the edge blade-like and broadly recurved at base.

M. repetitus, new sp.

Broadly oval, castaneous, or rufo-piceous, broad posteriorly. Head bluntly rounded in front, with short, close teeth and remote bristles; the margin broadly recurved, rufescent; the submargin grooved; disk

a little convex, somewhat finely punctate, the base almost impunctate; the margin posteriorly broadly excavated, and near each eye and at the basal angle of the tylus is a small round pit; ocelli red, placed remotely from each other and a little behind the front line of the eyes. Rostrum ferruginous or pale piceous; the second joint much compressed, long. Antennæ moderately stout; the second joint scarcely one-half as long as the third; the third gradually enlarged toward the tip; the fourth and fifth subequal, long-oval. Pronotum narrowing anteriorly; the sides oblique, curving inward at the prolonged anterior angles, smooth, finely and closely punctate, excepting the anterior part of the disk; the anterior margin deeply sinuated; the collum narrow, smooth, but distinctly defined; the outer margins remotely ciliated; posterior angles direct, not tumid, with steep sides; the intra-humeral impressions obsolete. Pectus rufo-piceous, smooth, impunctured, darker on the posterior pleural pieces. Legs and coxæ flavous, or pale rufo-piceous; the anterior tibiæ very moderately compressed, armed exteriorly with about six dark spines; the spines of the posterior tibiæ stout, long, rather remote, black-piceous; the tarsi testaceous, their middle joint very short. Scutellum a little flattened, polished, and impunctured on the disk; the remaining surface closely punctate, minutely rugulose; the edge very narrowly recurved; the tip faintly impressed, obsoletely carinated. Corium wide, moderately convex, smooth, coarsely, closely punctate, on the disk obsoletely punctate; the posterior margin feebly sinuated, furnished with a thinner border, and with the outer angle a little produced. Embolium broad, reaching to the second ventral segment, longitudinally scooped out, minutely scabrous. Membrane brownish-white, a little declivous posteriorly. Venter polished, minutely shagreened, and wrinkled each side and behind; the genital segment almost vertical, and crowned with a few erect bristles; the margins of the connexivum with a few remote bristles.

Length $3\frac{1}{2}$ –4 millimeters. Width of base of pronotum 2 – $2\frac{1}{2}$ millimeters.

From the vicinity of San Francisco; collected by Messrs. Henry Edwards and James Behrens. One specimen has been obtained in the vicinity of Baltimore.

HOMALOPORUS, new genus.

Ovate; sides of pronotum oblique, remotely ciliated, curving almost abruptly inward at the anterior angles, the angles a little prolonged; anterior margin moderately deeply sinuated, furnished with a narrow flat collum, which extends distinctly to the outer angles, and is defined by a clean-cut, deep line bearing two indented points behind each eye; surface rather flat, more convex on the anterior lobe, the transverse line distinct, narrow, abbreviated each side, terminating in a sunken point before the submargin, and each side of tip, anteriorly, with an indented point; the posterior margin slightly arcuated, a little sinuated near the

humeri, the angles rectangular, the humeri a little prominent. Head bluntly rounded, radiately, not very distinctly, wrinkled on the cheeks, with a deep indentation each side anteriorly, and a shallower, wider one next each eye; margins abruptly recurved, the submargin grooved, set with close, minute teeth and slender bristles; the tylus reaching to the front, the lateral lobes not quite meeting in front of it, its sides almost straight and parallel. Basal and second joints of the antennæ slender and very short, the first not reaching to the margin of the head; the third joint enlarging toward the tip, a little shorter than the fourth; fourth and fifth longer, subequal, thicker, long-oval. Rostrum of moderate length, the basal joint almost as long as the head, a little shorter than the bucculæ; the bucculæ of moderate width, tapering posteriorly, a little wider in front; second joint compressed, a little arcuated, longest; third joint less robust and shorter than the second, but longer than the apical one; the apical very slender, acute at tip. Ostiolar canal less than half the length of the episternum, placed next to the suture, ligulate, a little raised, before the apex obliquely impressed; the apex scale-like angular, acute. Legs moderate, the anterior tibiæ moderately compressed, the exterior margin armed with about seven teeth. Scutellum depressed, a little longer than wide, narrow at tip and distinctly contracted, the apex bent down. Corium wide, with two grooved lines on the outer side of the discoidal area, the inner of which is arrested behind the middle, the posterior margin a little oblique, subtruncated, costal margin strongly arcuated, its base remotely ciliated; epipleura long, wide at base. Margins of the venter remotely ciliated.

H. congruus, new sp.

Light rufo-castaneous, polished, shining, remotely and slenderly ciliated on the sides of the head, pronotum, corium, and abdomen ovate, moderately flat above. Head almost flat, each side of the tylus with at least three oblique grooves, which define intervening, not very distinct, wide wrinkles; pits each side, anteriorly, deep, distinct, moderately large, those next the eyes large and shallow; impressed line each side of tylus deep and well defined, contracted near the middle; the surface not apparently punctured; ocelli small, placed very far back, and near the eyes, a depression between them and the eyes; the eyes rather flat, somewhat deeply seated, the margin in front of them prominently recurved. Antennæ, rostrum and tarsi pale ferruginous, or ochreous-yellow, the joints of the former moderately short, the second joint very short. Rostrum reaching to the intermediate coxæ, the apical joint very slender. Pronotum subquadrate, a little wider than long, the sides straight, a little narrowing toward the front, the edge recurved, the anterior angles a little protracted, the margin exterior to them curved inward; surface moderately flat, remotely punctate on the transverse line and behind it, and on the sides, more particularly next the anterior angles; the disk anteriorly with one or two shallow pits each side; the anterior

margin abruptly sinuated, margin of the sinus with a collum, which becomes narrower each side as it runs outward to the exterior angles, behind each eye with two dragged indentations. Scutellum flattened on the middle, remotely, a little coarsely, punctate, the apex and a little before it somewhat rugulose. Legs pale chestnut-brown, or ferruginous, the spines and teeth piceous, those of the outer edge of anterior tibiæ short and not very stout. Propleuræ and outer area of the meso-, meta-, and epi-sterna pale, smooth, highly polished. Corium finely, remotely punctate, the punctures somewhat obsolete upon the disk, those of the sutures coarser; membrane white, longer than the venter. Venter smooth, highly polished, faintly wrinkled on the sides of the disk and pale, posteriorly.

Length 5 millimeters. Width of base of pronotum 3 millimeters.

This very interesting little species, which might easily be confounded with either *Macroporus repetitus* or *Rhytidoporus indentatus*, was first discovered by Mr. Benjamin H. Smith in the vicinity of Denver City, Colo. Since then it has been taken in Dallas County, Texas, by G. W. Belfrage; and a few specimens occurred to me while collecting insects near the foot-hills of the Rocky Mountains, west of Denver, in August, 1875. The summer was a particularly rainy one, and the sudden chilling of the atmosphere by a hail-storm would cause this insect, together with beetles, flies, *Hymenoptera*, and other *Hemiptera*, to take refuge under the tufts of grass and roots of Yuccas and other flowers and herbs, where they remained secure from the driving elements.

ÆTHUS Stål.

Oval, long oval, or subovate, moderately convex; head short and wide, the margins reflexed, the submargins with erect teeth and bristles; the lateral lobes flattened, equal to the tylus in length; the base of the head prominently convex; ocelli large, far apart, placed behind the posterior line of the eyes. Rostrum of medium length, stout, the second and third joints arcuately expanded, the basal joint not exceeding the bucculæ in length; bucculæ narrow and long; antennæ of five joints, the joints moderately short, the second joint longer than the third, the fourth and fifth long-ovate, subequal. Pronotum subquadrate, wider than long, the sides more or less obliquely narrowing anteriorly, remotely ciliated, the anterior margin deeply sinuated to receive the head, destitute of a collum, or only having a thickened edge on that part. Prosternum raised, broadly grooved, the lateral flaps narrow and short. Ostiolar canal flat, of medium length, set on an oblique and acute scale. Anterior tibiæ but moderately expanded, the exterior margin with a few long spines; posterior tibiæ long and rather straight. Scutellum triangular, longer than wide, narrow at tip, and contracted just before the tip. Corium a little convex, of medium width, the costal margin broadly curved, with the edge thickened before the middle, and remotely ciliated; the posterior margin obliquely truncated, with the

outer angle a little produced. The ventral submargin very remotely ciliated.

This genus was not sufficiently characterized by Mr. Dallas to mark its distinctness from *Cydnus* Fieber and its allied genera. The characters here cited include those given by Dr. Stål in his Hemiptera Africana, and will abundantly serve to separate the genus from *Cydnus* Fieber. The types of the genus *Cydnus* will thus be *C. flavicornis* Fab. and *C. nigrita* Fab., both European species. Modifications of the pleural pieces of both these species, and the long ostiolar canal terminated by an excavated bulla, added to the characters given by Dr. Fieber, will distinguish the genus from all others thus far described. I regret that the *Cydnidæ* of the collections in this country are too few to enable me to gauge the minor groups with precision. This can only be done by working over a full series of both sexes of the principal forms from various parts of the world.

E. communis, new sp.

Moderately broad-oval, almost ovate, a little convex above, chestnut brown, or rufo-piceous. Head flattened in front, smooth, polished, almost impunctate, short and blunt, hardly emarginate in front of the tylus; the submargin with remote, short teeth and fine bristles, the margins abruptly recurved; lateral lobes with a few broad, flat, oblique wrinkles, each side with two or three coarse punctures, before the eye with a broad fovea, and near the angle next the tip of the tylus with a smaller fovea; tylus very distinct, almost flat, before the middle with about two transverse, impressed lines; base of head humped, narrow. Rostrum reaching behind the intermediate coxæ, ochereous, or pale ferruginous; the basal joint longer than the bucculæ. Antennæ ochereous; basal joint stout, about as long as the second, the second and third quite slender, the third very short; fourth and fifth moniliate, long-subovate. Pronotum subquadrate, moderately flat, the sides a little obliquely narrowing anteriorly, the edge reflexed, coarsely punctate and remotely ciliate; the anterior angles subacute and the margin outside of them curved inward; the anterior margin deeply sinuated, a little sunken each side of the sinus, then a little humped behind the eyes, and on the margin with two large sunken points; surface minutely and very obsoletely punctate behind the sinus and on each side anteriorly, then coarsely, remotely so on the transverse line; posterior margin moderately steep, a little arcuated, the intra-humeral depressions shallow, humeri convexly elevated. Legs very pale rufo-castaneous, the spines of the tibiæ long and sharp, dark piceous. Pleural pieces highly polished. Corium broad, coarsely punctate in rows, the punctures of the disk finer, almost obsolete; the costal margin thick, set with six very coarse pits, each carrying a bristle; embolium triangularly widened behind the base, the flap closely embracing the metapleura; membrane slightly tinged with brown. Venter polished, the

exterior margin with a series of remote, long, slender bristles; the posterior edges of the segments each side with a few very minute teeth, the penultimate and last segments transversely wrinkled, the latter with a few indistinct punctures.

Length 6-7 millimeters. Width of pronotum 3-4 millimeters.

Inhabits Cuba. Sent from Havana by Prof. Felipe Poey, and from the interior of the island by Mr. Charles Wright; also, from near Saint John's River, Florida, by Mr. E. Norton.

Form *b*.—Piceous black, a little narrower anteriorly, the head a little more rounded, and more distinctly emarginated in the middle of the clypeus, and the sides of the pronotum sinuated and more hairy. Obtained near Orange Springs, Florida, by Miss Modeste Hunter, and in Dallas County, Texas, by Mr. G. W. Belfrage.

The genus is represented by numerous species, both from South America and Africa.

RHYTIDOPORUS, new genus.

Oval, aspect of *Cydnus* Fieber. Head bluntly rounded in front, the tylus extending to the tip, the lateral lobes flat, obliquely and obsoletely wrinkled, a sunken point each side of tylus anteriorly, and a larger one next to the eye; margins thick, reflexed, the submargin grooved, armed with small erect teeth and fine bristles; base of the head prominent, convex, sunken each side; ocelli small, placed behind a line parallel with the base of the eyes, and a little nearer to them than to each other. Antennæ of medium length; the second joint shorter than the third. Bucculæ shorter than the throat, narrow, a little wider posteriorly. Rostrum of medium length; the basal joint as long as the head; the second longest, compressed, arched; third subequal to the first; fourth slender, shortest. Prosternum convexly elevated, the center broadly scooped out, the side-flaps slender, narrow, waved. Pronotum wider than long, almost flat, the anterior lobe a little more convex; lateral margins a little oblique, moderately curved inward at the anterior angles, the angles subacute, curving with and fitting against the eyes; transverse line very shallow, placed far back; posterior margin almost straight, the exterior angles steep, subrectangular; the humeri tubercularly prominent. Ostiolar canal less than half the length of the episternum, fusiform; the tip depressed, scooped out, and subacute, connected with a flat, ligulate piece which runs outward to the submargin. Anterior tibiæ very slightly expanded, the outer edge with only five or six small spines. Scutellum long, very narrow at tip. Corium moderately wide, the costal margin a little arcuated, thickened and widened from the base to behind the middle, having one setigerous puncture; posterior margin concave.

R. indentatus, new sp.

Pale rufo-castaneous, oval, remotely and slenderly ciliate. Head flat, moderately bluntly rounded, the outer margin broadly rufescent, the

teeth fine, piceous, the bristles fine; wrinkles of the lateral lobes indistinct and flat, the surface with a very few obsolete, minute punctures; tylus percurrent, slightly convex, depressed behind the middle. Antennæ pale ochereous or ferruginous; first joint stout, reaching a little beyond the margin of the head; second slender, shorter, a little shorter than the third; the third increasing toward the tip, subequal to the fourth; the fourth and fifth fusiform, the latter longest. Rostrum extending to the intermediate coxæ, pale ochereous. Pronotum highly polished, subquadrate, wider than long, the sides a little obliquely narrowing anteriorly, remotely ciliated, widely deflected over the pleuræ, more or less tinged with rufous on the sides and posteriorly; anterior margin moderately emarginated, the collum obsolete, with an indented point each side and next the anterior angles; anterior lobe a little convex, impunctate, excepting on the sides, the transverse line feeble, placed far behind the middle, set with a few fine, remote punctures, and with a few fine punctures behind it; posterior margin almost straight, hardly sinuated near the humeri, the latter a little prominent, the angles nearly rectangular. Scutellum flat, longer than wide, contracted before the tip, the tip narrow, depressed, bearing a few indistinct punctures; the surface coarsely, very remotely punctate, excepting on the base; the suture next the frenum very minutely punctate. Legs ochereous, or pale rufo-flavous, the tarsi paler yellow; femora with two rows of setigerous punctures on the under side. Corium with fine, scattered punctures around the sides and ends; costal margin with one setigerous pit near the base; the sutures more coarsely, evenly punctate; membrane tinged with brown. Sides of the posterior margins of the ventral segments minutely rastrated and denticulated.

Length $5\frac{1}{2}$ - $6\frac{1}{2}$ millimeters. Width of base of pronotum 2- $2\frac{1}{2}$ millimeters.

Inhabits Cuba, and has been collected in various parts of the island, by Prof. Poey and Mr. Charles Wright. Southern Florida, Dr. E. Palmer.

CRYPTOPORUS, new genus.

Subquadrate-oval. Head wider than long, a little bluntly rounded, flat, with two or three obsolete wrinkles each side, a pit near the tip of each lateral lobe, a less distinct one next each eye, and the posterior surface each side sunken; margins much reflexed, toothed and ciliated; the tylus a little shorter than the lateral lobes, and the lobes curved almost in contact in front of it. Antennæ short and stout, the basal joint barely reaching the anterior margin; second joint slender, scarcely as long as the third, the third subconical, a little shorter than the fourth; fourth and fifth subfusiform, nearly equal, longer than the third. Bucculæ long, narrow, rough, inclosing the whole of the basal joint; rostrum of medium length, second joint longest, a little compressed, third longer than the fourth. Prosternum raised and grooved, the lateral plates short, a little arched. Pronotum transverse, subquadrate, a little

obliquely narrowing anteriorly; anterior margin moderately emarginated, destitute of a collum, indented each side of the head; lateral margins densely fringed; posterior margin subtruncate, feebly sinuated next the humeral angles. Scutellum a little longer than wide, narrow at tip. Ostiolar canal very short, consisting of only a narrow ridge running out not more than one-fourth the length of the episternum; the anterior margin of the meta-episternum composed of a flat piece, ligulate, running outward to the tip, and widening there; the ostiole is oval, and situated at the point of contact of that piece and the canal. Costal margin of the corium closely pitted, and fringed with bristles. Anterior tibiæ wide, very distinctly ridged and sulcated, and many-spined.

C. compactus, new sp.

Subquadrate-oval, blackish-piceous, with the margins of the corium more or less tinged with rufous. Head deep black, flat, highly polished, impunctate, but with indications of minute rugosities in places; wrinkles of the lateral lobes obsolete and abbreviated; fossæ very distinct; sides of the tylus almost straight, the apex very slightly narrowed, blunt; base of the head convexly elevated. Antennæ short and stout, pale, or moderately dark piceous; second joint shortest and narrowest. Rostrum ferrugino-piceous, stout, reaching to the intermediate coxæ. Pronotum wider than long, a little narrowing anteriorly, the lateral margins reflexed, densely clothed with long, ferruginous pubescence; the surface highly polished, irregularly punctate on the sides, and obsoletely on and behind the transverse line; posterior half with a few transverse scratched lines; fossæ near the anterior angles small but distinct; humeral angles a little convexly prominent, the sinus next them almost obsolete. Scutellum very feebly convex, the surface a little uneven, deeply, but hardly coarsely, punctate; the submarginal suture deep, closely and very minutely linearly punctate; the tip rugulose and much depressed. Corium minutely punctate, but coarsely on the sutures, the surface highly polished, rufous on the costal area and inner margin of the clavus; the costal margin very thick, having coarse punctures to beyond the middle, which are close set and carry ferruginous bristles; membrane faintly tinged with brown, and with a few piceous thick places on the nervures. Legs rufo-piceous; the spines black; the tarsi ferruginous; the posterior coxæ are very much prolonged exteriorly, and flattened, and acutely ovate at the outer end. Venter polished, minutely rugulose exteriorly and on the connexivum, and a little wrinkled on the last two segments.

Length 5 millimeters. Width of base of pronotum scant 4 millimeters.

Brought by Captain Julich from Galveston Island, Texas. It is a most interesting, compact, little species, which seems to be tolerably common in the region cited.

Thus far no specimens have been secured in the more interior parts of the State, although some of those counties have been pretty thoroughly examined.

PANGÆUS Stål.

Oval, elliptical, or subquadrate-oval. Head widely rounded, the lateral lobes flat, obliquely wrinkled, with a distinct pit next each eye, and one each side not remote from the tylus; submargin with stiff bristles, but no teeth; tylus wide and long, depressed at base, as long as the lateral lobes, bounded in common with them by the reflexed margin. Ocelli on or behind the posterior line of the eyes, separated farther from each other than from the eyes. Antennæ moderately stout, and not very long; the fourth and fifth joints subfusiform, about equal, each longer than either of the preceding ones. Bucculæ as long as the throat, narrow, and almost straight, the basal joint of the rostrum inclosed by them; second joint compressed, arched, longest; the third longer than the fourth. Pronotum subquadrate, wider than long, narrower in front than at base, the anterior margin deeply sinuated, the margin proper with a thick percurrent collum, which runs more slenderly to the anterior angles; lateral margin with a few bristles; the surface a little convex, with the transverse, impressed line placed a little behind the middle. Ostiolar canal ligulate, or subfusiform, about one-half the length of the episternum, attached to a scale which runs farther outward and tapers to a slender point. Anterior tibiæ moderately expanded, armed on the outer edge with long, curved teeth. Scutellum a little longer than wide, sensibly narrowed at tip. Costal margin a little expanded, grooved, set with less than six bristle-carrying pits; posterior margin of the corium almost obliquely truncated, the outer angle a little prominent, acute.

1. *P. bilineatus*.

Cydnus bilineatus Say, Journ. Acad. Phila., iv, 315, No. 1.

Elthus bilineatus Dallas, Brit. Mus. List, Hemipt., i, 119, No. 20.

Pangæus bilineatus Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 9.

Cydnus femoralis H.-Schf., Wanz. Ins., v, p. 98, fig. 548.

Oval, coal-black, highly polished; head bluntly rounded, strongly margined, in some specimens with a very minute emargination in front of the tylus; generally the tylus comes up fully to the front, and fills the space at the apex of the lateral lobes; submargin with remote, erect bristles; surface of the lateral lobes uneven and obliquely wrinkled, the pits near the eyes and those near the front distinct; the tylus with four or five shallow transverse furrows anteriorly; base of the head prominently elevated, convex, polished, impunctate; ocelli large, amber-yellow or reddish. Antennæ yellowish-piceous, stout; the second joint a little longer than the third. Bucculæ minutely and obsoletely rugulose, a little depressed on the side of the middle; rostrum pale rufo-piceous, reaching between the intermediate coxæ. Pronotum moderately obliquely narrowing toward the front; the anterior angles a little prolonged and exteriorly a little curved inward; the lateral margins remotely ciliated, the edge reflexed, but the sides widely arching down

over the pleuræ; surface moderately convex on the anterior lobe, flatter posteriorly, the transverse line distinctly impressed, irregularly punctate, terminating before the submargin in a distinct fovea, the surface behind the line and near the lateral margins irregularly punctate; the exterior suture with a series of remote, coarse punctures, and remotely ciliated; anteriorly and posteriorly destitute of punctures, particularly next the hind margin; humeri a little prominent, a little prolonged forward in a ridge, exterior to which the side is high and steep. Legs rufo-piceous; the anterior tibiæ moderately expanded; the outer edge with about ten rather long, curved spines; the upper surface transversely furrowed; the tip with three or four long, straight spines, and the inner margin near the apex with a long, slender, oblique one; posterior tibiæ long, slightly curved, closely set with long black spines; tibiæ ochreous or ferruginous. Scutellum a little convex at base, depressed behind the middle, coarsely, remotely punctate from behind the base almost to the tip, the lateral submarginal line deeply impressed, finely punctate. Corium of medium width, the surface irregularly rugulose, finely remotely punctate, and with coarser punctures on the inner seams on and near the clavus; the costal margin with three or four pits carrying bristles; membrane a little brownish. Venter smooth, impunctate, the posterior edges of the segments each side with very minute teeth; the connexivum uneven, irregularly indented.

Length 7-8 millimeters. Width at base of pronotum $3\frac{1}{2}$ - $4\frac{1}{2}$ millimeters.

Inhabits Massachusetts, Connecticut, New York, Pennsylvania, Maryland, and the Southern States as far west as the middle of Texas. One specimen from Matamoras, Mex., agrees with the form as seen in the Atlantic region. It is also the *Æthus robertsoni* of Fitch's MSS., from Indian Territory, as I know from an examination of a specimen in his collection, as also from the determination by Dr. Signoret, to whom Dr. Fitch sent specimens.

It is of importance to record that this species varies very much in some of its structural features. In a few specimens, which were normal in other respects, the margin of the clypeus was scalloped each side of the middle, and emarginated in front of the tylus. The second and third joints of the antennæ are sometimes equal; at others, either may be longer than the other. The ostiolar canal and the plate to which it is attached vary in length and width, and are often ragged on the posterior margin. Two specimens have been examined by me, which had the ostiolar piece of one side normal, and on the opposite side long, triangular, and jagged. Usually, there are but three pits and bristles on the costal margin, but occasionally there are four, and in one specimen I noticed five.

2. *P. rugifrons*.

Cydnius rugifrons H.-Schf., Wanz. Ins., v, p. 97, fig. 547.

Oval, piceous-black. Head a little broadly rounded in front, the anterior margin broadly recurved, remotely ciliated; the surface flat, but

a little raised on the middle, irregularly and obliquely wrinkled; the pits of the submargin, three in number each side, smaller than that of the middle, the one next the eye largest; base of the head prominent, convex, smooth, impunctate, the adjoining surface scooped out, and a little wrinkled anterior to the ocelli. Antennæ pale, castaneous or ferruginous, the second joint slender, and not quite as long as the third; fourth and fifth longer, subequal. Rostrum pale castaneous, reaching not quite to the intermediate coxæ; the basal joint a little shorter than the throat; the second joint moderately compressed, a little widened and arched, longer than either of the others; third joint a little compressed and widened, longer than the fourth; the fourth more slender, shortest. Bucculæ dark piceous, a little roughened, longer than the basal joint of the rostrum, and inclosing it. Pronotum rather more convex than in the preceding species, the sides a little more narrowing anteriorly, remotely ciliated, the anterior angles not so much prolonged, the exterior margin gently curving toward them; anterior margin less deeply and not so squarely emarginated as in the preceding species, the collum-like rim flat, with a distinct rim on the middle of the margin; transverse line deeply impressed, with few and fine punctures, the pit at each end of the line small, round, but distinct, the sides with a very few fine punctures, and a very few only behind the middle; humeral angles convexly ridged, the sides exterior to them steep, with short but distinct sinuses on the posterior margin. Scutellum narrow at tip, the surface distinctly, irregularly, and a little coarsely punctate from near the base to the tip, the tip depressed and a little rugulose; the transverse, impressed line at base minutely punctate. Legs rufo-castaneous, the tarsi ochreous; anterior tibiæ a little expanded, armed on the outer edge with about eight slender spines. Corium a little rufo-piceous, obsoletely rugose, a little coarsely punctate at base and on the basal parts of the sutures, the disk almost impunctate, and the base and apex of the costal area finely but closely punctate; costal margin at base with three setigerous pits; membrane brownish, extending beyond the abdomen. Venter rufo-piceous, highly polished, impunctate; the posterior edges of the segments each side of disk as far as to the connexivum with minute teeth; the center of the margin of the penultimate segment with a small depression carrying minute, rastrate lines; the connexivum with a few minute tubercles on each segment.

Length $5\frac{1}{2}$ –6 millimeters. Width of base of pronotum 3 – $3\frac{1}{2}$ millimeters.

From South Carolina and Georgia.

In one specimen, the rastrated impression on the edge of the penultimate ventral segment is not apparent.

A specimen from South Carolina, agreeing with the typical form in other respects, has the rostrum extending to the posterior line of the intermediate coxæ. This species bears close resemblance to the dwarfed males of the preceding one.

3. *P. discrepans*, new sp.

Broader, and more quadrate than either of the preceding species, the corium longer, and the membrane much smaller and shorter. Deep black, highly polished; the head transverse, blunt, broadly rounded, remotely ciliate; the surface flat, broadly depressed each side, rugose, unevenly punctured and obsolete wrinkled; the pits next each eye present, the others obsolete; anterior margin broadly reflexed, emarginated more or less distinctly in front, the lateral lobes curving in front of the tylus, the tylus tapering at tip; base of head a little convexly elevated, roughened each side; the ocelli dark, minute, and placed very far back. Antennæ piceous at base, pale ochereous from the tip of the third joint to the tip; second joint slender, much longer than the third; the third shortest, increasing in thickness toward the tip; the fourth and fifth long-ovate, the fourth longer than the fifth, and subequal to the second. Bucculæ a little shorter than the head, a little arched, punctate, and rugulose, inclosing the basal joint of the rostrum. Second joint of rostrum long, subequal to the third, very much compressed, arched, widened; fourth joint short and slender; rostrum reaching not quite to the intermediate coxæ. Pronotum a little wider than long, the sides curving inward a little at the anterior angles, the angles short, the submargin remotely ciliated, the edge distinctly recurved; surface moderately convex, highly polished, uneven and depressed behind the middle; the anterior lobe more convex, rough and closely punctate each side, more finely punctate near the angles; the transverse line interrupted in the middle, remotely, coarsely punctate, and with a group of punctures behind the disk; anterior margin moderately sinuated, the collum-like margin obsolete on the middle, but defined there by a curved series of coarse punctures; the surface depressed in front of the humeri, the humeri slightly prominent, and the sinus adjoining them very short and shallow. Lateral flaps of the prosternum slender, abbreviated, a little arcuated. Legs piceous, a little tinged with rufous; the anterior tibiæ moderately expanded, armed on the outer margin with about eight long stout spines. Ostiolar canal with a slender carina from the base to near the tip. Scutellum transversely, convexly elevated near the base, and convex behind the middle, coarsely, remotely punctate on the disk; the tip narrow and very finely, obsolete punctate; the lateral margins with a line of very coarse punctures, which begin in a groove behind the base, and then continue without the groove from behind the middle to near the tip; the transverse line at base very deep, minutely punctate. Corium minutely, obsolete punctate, on the disk very remotely, and on the sutures very coarsely so; the posterior margin almost truncate, the outer angle blunt and scarcely prominent; costal margin with six or seven setigerous pits. Membrane quite short, slightly tinged with brown. Venter highly polished, impunctate, excepting a transverse line of coarse punctures next the suture of the basal segment; posterior edges of the segments each side with very minute teeth;

connexivum depressed, tuberculate, and wrinkled, the exterior submargin remotely ciliate.

Length 7-8½ millimeters. Width of base of pronotum 3½-4¼ millimeters.

From near Fort Cobb, Indian Territory, by Dr. George H. Horu, and from San Diego, Cal., by William Holden; also inhabits Texas and Mexico.

4. *P. margo*.

Ethus margo Dallas, British Museum Catal. Hemipt., i, p. 116, No. 12.

Pangæus margo Stål, Hemipt. Mexicana, Stettiner Ent. Zeit., xxiii, p. 95, No. 47.

Moderately long-oval, piceous-black, polished, sometimes tinged with rufous on the base of pronotum, front of head, and on the costal area. Head longer than wide, remotely ciliated with fine bristles, broadly depressed around the front of clypeus, the margins strongly recurved; surface of the lateral lobes uneven, minutely and obsoletely rugulose, the usual broad wrinkles obliterated; pits present each side near the middle, one in the exterior angle near the eye, and another on the inner margin of the eye near its middle; the pits setigerous; tylus as long as the lateral lobes, a little narrower at the apex, the lobes curving against its tip but not meeting in front of it; the depressed lines bounding it become almost obliterated where it rises behind the middle, and then become expanded and deepened at its base; ocelli large, placed on a line with the base of the eyes; base of head moderately convex, smooth. Antennæ ferruginous, the second joint a little shorter than the third. Rostrum ferruginous, or pale castaneous, reaching to the intermediate coxæ; the basal joint a little shorter than the bucculæ and almost inclosed by them; the bucculæ dull, minutely rugulose; second joint long, moderately compressed, a little arched; the third feebly compressed, a little widened, about of the same length as the second; the apical joint shortest, not very slender. Pronotum a little wider than long, the sides oblique, decidedly narrowing toward the front, sparingly ciliated, the surface moderately convex, the transverse line deeply indented, sharply separating the anterior lobe, remotely punctate, and the punctures scarcely forming a disconnected series from those which extend back upon the posterior lobe, and across its width to the submargin; on the sides the punctures are massed, extending from before the humeri to the anterior angles, and invading an arcuated impression, which runs forward from the pit at the end of the transverse line; disk of the anterior lobe impunctate, but with a shallow, longitudinal, impressed line in front; the marginal stria very distinct, and with a few obsolete pits in its bounding line; humeri distinct, impunctate, the sinus adjoining small, shallow. Scutellum convexly prominent near the base, the immediate base with the impressed line minutely punctate; surface coarsely, remotely punctate, somewhat in transverse, irregular lines almost to the tip; tip posteriorly with a few fine punctures; the lateral marginal line deep, long, with faint vestiges of pits

in its deeper part. Prosternum wide, the margin narrow, abbreviated in front. Legs rufo-piceous; the anterior tibiæ rather wide, armed on the outer edge with about nine not very long piceous spines; tarsi ferruginous. Corium tinged with rufous, particularly on the costal area; the sutures coarsely punctate, the costal area and the base and apex of the discoidal area finely punctured and minutely uneven, the disk with only vestiges of punctures, which are placed very wide apart; membrane of medium length, a little brownish. Venter very smooth, remotely ciliated exteriorly, with the posterior edges of the segments exteriorly very minutely denticulated.

Length 7-9 millimeters. Width of base of pronotum $3\frac{1}{2}$ -5 millimeters.

From Mexico. One specimen from Arizona.

The head is longer and less bluntly rounded than in *P. bilineatus* Say, to which it is the most closely related. All the specimens seen by me, one of them a type sent to me by Dr. Signoret, agreed in having three setigerous pits on the costal margin of the corium. I have alluded to setigerous pits on the head of this species, while I have not done so in the descriptions of either of the other species. This is owing to the fact that, although I had fresh specimens before me in some cases, none of them exhibited the bristles here described.

5. *P. piceatus*.

Pangæus piceatus Stål, Hemipt. Mexicana, 1862, xxiii, 95, No. 48.

Oval, almost ovate, pale castaneous, or piceous, polished. Head longer than wide, depressed anteriorly, the margin broadly recurved, hardly bluntly arcuated, remotely ciliated; the lateral lobes longitudinally channeled in two places, and with a few oblique striæ, the pits obsolete; tylus reaching the tip of the head, narrowed at the apex, the cheeks not quite meeting in front of it, its middle convexly elevated. Antennæ stout, the basal joint thick, not reaching to the margin of the head; the second very slender; subequal to the first; third much longer, increasing in thickness toward the tip; fourth and fifth about equal, scarcely longer than the third. Rostrum ferruginous, reaching to the intermediate coxæ; the second joint compressed, a little arched, somewhat longer than the first. Pronotum a little wider than long, the lobes well separated by the deep transverse line, each a little convex, the line punctate, and with only a few punctures behind its middle, remaining surface impunctate; lateral margins obliquely narrowing toward the front, very remotely ciliated; the humeri distinct, convexly ridged, the sinus next to them almost obsolete. Scutellum a little longer than wide, narrow at tip, feebly convex; the depressed line at base minutely punctate, the surface almost as far as the tip and the impressed lateral line coarsely, remotely punctate. Legs pale rufo-piceous; the anterior tibiæ moderately expanded, armed on the outer margin with about eight long, slender spines. Corium a little uneven, impunctate, excepting on the base and basal portions of the sutures; costal edge with only one or two setigerous pits; membrane faintly brownish. Ostiolar canal broad, obliquely striated next to the tip. Venter paler, smooth, impunctate.

Length 5 millimeters. Width at base of pronotum 3 millimeters.

Inhabits Mexico. One specimen from Arizona.

This species resembles our *Rhytidoporus*, but the generic characters given above will abundantly serve to separate it.

The descriptions of the following species, unknown to me otherwise, are here included to complete the group as far as the literature of the subject is known to students in America.

Probably when specimens of them are properly examined, they will prove to belong to the present genus, in which, for the present, we place them with a query. No doubt, most, if not all, of them will yet be found in our western Territories and in Texas.

5. *P. ? fusiformis*.

Ethus fusiformis Walker, British Museum Catal., pt. i, p. 158, No. 20.

"Black, fusiform, slightly convex and shining, with hardly any bristles. Head hardly punctured, transversely and very slightly rugulose, about half the breadth of the thorax. Eyes bright red. Antennæ less than half the length of the body; first joint red at tip; second a little longer than the third; fourth much longer than the third; fifth a little shorter than the fourth. Thorax with a few large punctures along each side, and with an indistinct transverse furrow, which is obsolete on each side and is accompanied by a few large punctures. Scutellum with a few large punctures, its breadth at the base much shorter than its length. Legs robust; tibiæ with stout spines. Fore wings dull, thinly and minutely punctured, more largely punctured along the hind border; membrane piceous."

Length of the body $5\frac{1}{2}$ lines.

Inhabits Orizaba, Mexico.

6. *P. ? fortis*.

Ethus fortis Walker, British Museum Catal., pt. i, p. 151, No. 21.

"Black, robust, elliptical, shining, slightly convex, beset with stout bristles along the sides of the head and of the thorax. Head more than half the breadth of the thorax, almost smooth, except some oblique striæ on each side in front. Eyes black. Rostrum reddish. Antennæ tawny, about one-third of the length of the body; joints from the second to the fifth slightly and successively increasing in length; third and fourth joints blackish, except toward the tips. Thorax almost smooth, with a distinct transverse furrow very near the fore border, and with an indistinct longitudinal furrow, which extends from the transverse furrow to one-third of the length. Scutellum thinly punctured, very much longer than its breadth at the base. Legs thick, and with stout spines; tarsi reddish. Fore wings smooth, with two striæ near the costa and two near the hind border; membrane white, hyaline."

Length of the body $3\frac{1}{4}$ lines.

Inhabits Oajaca, Mexico.

7. *P. ? tenuis*.

Aethus tenuis Walker, *ib.*, i, p. 151, No. 22.

"Black, elliptical, shining, nearly flat, a few long bristles on the sides of the head and of the thorax. Head nearly smooth, about half the breadth of the thorax. Eyes black. Rostrum reddish. Antennæ piceous, about one-third of the length of the body; joints from the second to the fifth about equal in width. Thorax nearly smooth, with two slightly curved, transverse furrows, one very near the fore border, the other across the middle; a slight longitudinal furrow extending for a short space hindward from the first transverse furrow. Scutellum with a few punctures, much longer than its breadth at the base. Legs piceous, stout. Fore wings almost smooth, with two striæ near the costa and two near the hind border; membrane brown."

Length of the body $2\frac{3}{4}$ lines.

Inhabits Orizaba, Mexico.

MELANÆTHUS Uhler.

Long-oval, or elliptical; the margins of head, pronotum, and corium, as well as those of the venter, fringed with remote bristles. Head semicircular, the margins slenderly recurved, ciliated, but destitute of spinous teeth; tylus as long as the lateral lobes; base of the head broad, not scooped out each side; bucculæ almost percurrent, widened at the posterior end; rostrum reaching almost or quite to the intermediate coxæ; the basal joint as long as the bucculæ; the second longest, a little longer than the third; third longer than the fourth; the fourth subequal to the basal one. Antennæ moderately stout and long; the basal joint stouter than the second, but not so stout as the fifth, a little narrowed at tip second more slender, either longer or shorter than the third; third thicker toward the tip; fourth longer; fifth longest, and subfusiform like the preceding. Pronotum transverse, very feebly convex, the lateral margins straight or nearly so, with the edge recurved; the anterior margin broadly sinuated, the posterior margin subtruncated. Scutellum longer than broad, acutely narrowing toward the tip; the tip narrow, acutely rounded, overlapping the inner angle of the corium. Exterior area of the corium broad, depressed; the costal margin curved inward toward the tip, leaving the connexivum exposed posteriorly; the posterior margin moderately oblique, feebly arcuated; the exterior angle a little produced. Legs normal, the anterior tibiæ very moderately compressed. Ostiolar canal long and slender, running outward about two-thirds the length of the episternum, broad and rounded at tip.

1. *M. robustus*, new sp.

Intensely black, shining, tolerably broad, almost flat above. Head disk-like, broad, depressed around the front, very coarsely, confluent punctured; the margin almost regularly semicircular, the edge trenchant, elevated; the tylus rugulose. Ocelli small, black, placed near the

eyes on a line much behind them. Occiput smooth on the basal line, broadly a little convex. Antennæ rufo-piceous, darker on the middle of the segments; second joint a very little shorter than the third. Rostrum ferruginous, or pale rufo-piceous, reaching almost to the intermediate coxæ; the second joint longest, very slightly compressed, pubescent. Pronotum smooth, transverse, a little narrowed anteriorly, curving toward the anterior angles, which are angularly rounded; the surface coarsely, closely punctured, obsoletely, remotely so on the disk, obsoletely transversely impressed, each side with a roundish or oblong faint impression; the anterior submargin with an arcuated line of punctures, the margin itself impunctured; posterior margin subtruncated, the edge abruptly decurved, just interior to the humeri a little impressed; the humeri a little roundedly elevated; the lateral angles rectangular. Disk of the propleuræ, and prosternum, coarsely punctured, the other parts polished, impunctured. Sides of the prosternum elevated, continuing almost to the apex of the second rostral joint; running obliquely inwards from the anterior angle is a short, slightly elevated carina. Scutellum broad, reaching beyond the line of the tip of the fourth ventral segment, remotely coarsely, posteriorly finely, punctured; the tip narrow, faintly impressed, reaching a little beyond the inner corner of corium. Corium sometimes tinged with rufous, polished, distinctly closely punctures, those of the disk finer, more obsolete; membrane milk-white, tinged with brown at base. Embolium grooved, punctured. Venter deeply punctured on the sides and behind; genital segment densely punctured. Connexival edge wide, thin, the submargin widely depressed. Female.

Length $3\frac{3}{4}$ millimeters. Width of pronotum 2 millimeters.

Hab.—Maryland, near Baltimore, December 24, under a stone; Andover, Mass., Mr. Sanborn.

2. *M. picinus* new sp.

Oval, rufo-piceous above, more narrowly rounded both before and behind than in the preceding species. Head a little more bluntly rounded in front, the edge very narrowly, but more abruptly recurved; the surface slightly convex, minutely punctured, obsoletely wrinkled; the submargin remotely ciliated, having two sunken points on each cheek, and a sunken point next each eye; the tylus percurrent to the tip, faintly wrinkled, carried farther back than in the preceding. Antennæ ferruginous, not so stout as in the preceding; the basal joint a little narrowed at tip; second subequal to the third, but not as stout; fourth and fifth longer, subequal. Rostrum not quite reaching to the intermediate coxæ, ferruginous or pale piceous; the second joint longest, a very little compressed. Pronotum piceous-black, broader than long, proportionately longer than in the preceding species; the sides a little more narrowed obliquely toward the front, remotely ciliated, and more broadly rounded at the boundary of the anterior angles; anterior margin deeply sinuated,

with two round, sunken points each side near the anterior edge; the surface a little roundedly declining each side, the disk almost flat, anteriorly impunctured; behind the middle with fine, remote, elongated punctures, minutely rugulose; each side coarsely, closely punctured, obsoletely longitudinally impressed, and with a larger sunken point in the midst of the punctures; transverse line obsolete, or absent; posterior margin abruptly decurving, smooth, impressed just interiorly to the humeri; humeri a little elevated, convex. Scutellum longer than broad, acutely narrowing toward the tip, hardly sinuated; the base roundedly, transversely elevated; at the base of this elevation an acutely impressed, slender, punctured line; behind the elevation, the surface is a little depressed, each side with the submarginal groove coarsely punctured; surface faintly rugulose, coarsely, remotely punctured, more finely and obsoletely so at tip; the tip acutely rounded, faintly impressed, the lateral edges a little upturned. Corium rufo-piceous, the elevated seams black; distinctly, a little remotely, punctured, obsoletely so upon the disk and costal space, excepting the base of the latter, which is distinctly punctured; the sutures each side of discoidal field finely distinctly punctured in lines; the posterior margin rather bluntly oblique, the exterior corner a little bluntly prolonged; costal margin curving inward toward the tip. Membrane hardly half as long as the corium; white, very faintly tinged with brown. Legs dark piceous, or rufo-piceous, normal; the anterior tibiæ with few spines; tarsi testaceous, or pale ferruginous. Venter smooth on the disk; the sides minutely wrinkled, and, together with the genital segment, closely punctured, the last ventral segment transversely minutely wrinkled. Connexivum tolerably broad, flattened, the edge trenchant. Embolium long, tapering to a slender point, broadly, longitudinally impressed, minutely rugulose, with a few punctures near the base.

Length 3-3½ millimeters. Width of pronotum barely 2 millimeters.

Hab.—Pennsylvania, in May. A single specimen was kindly given to me by Prof. S. S. Haldeman. I obtained a second specimen while collecting with Dr. F. E. Melsheimer, in York County, Pennsylvania.

3. *M. spinolæ*.

Ethus spinolæ Signoret, Ann. Soc. Ent. France, 1863, p. 545, 12.

Elongate-oval, piceous-black, polished, the sides almost parallel. Head convexly inclining in front, the margin more triangularly rounded than in either of the preceding species, the edge not apparently recurved, remotely ciliated; the tylus broad and long, a little longer than the lateral lobes, faintly rugulose; the cheeks faintly rugulose, each side near the front margin with a sunken point, and near each eye two smaller approximate sunken points. Antennæ ferruginous or pale piceous; second joint the most slender, a little longer than the third; the third a little stouter, shortest; fourth a little longer than the second; fifth longest. Rostrum ferruginous, scarcely attaining to the middle coxæ; second

joint longest, slightly compressed; third a little longer than the fourth; the fourth shortest, slender. Pronotum almost twice as broad as long, finely punctured along the sides and posteriorly, very little narrower before, the lateral margins a little curved inward toward the anterior angles, the edge recurved; the anterior angles subacute, each having a minute sunken point adjoining the margin; each side of the sinuation of the anterior margin is a similar sunken point. Just interior to the humeral angles is an impression which runs forward to before the middle, and bears a number of coarser confluent punctures. Legs dark piceous, or a little rufo-piceous; the anterior femora with a minute protuberance below, near the apex, minutely spinulose; anterior tibiæ very slightly compressed, moderately spinous, the posterior pair long and slender; tarsi testaceous, or ferruginous. Scutellum long, acutely narrowing, the tip acutely rounded, minutely punctured, the lateral impressed line slender, shallow, distinctly punctured; the base convexly elevated transversely, almost impunctured, its base with a deeply impressed, transverse, slender, punctured line. Corium about three-quarters of the length of venter, not as broad as in the preceding species, finely, distinctly punctured, the impressed sutures with rows of somewhat larger punctures; costal margin very slightly curved at tip; the posterior margin more acutely oblique than in the preceding, straight, the outer tip not produced, very acutely rounded; membrane whitish, not half as long as the corium, with two or three very indistinct nervures. Venter smooth, shining, very minutely punctured; the connexivum longitudinally broadly impressed, remotely ciliated, the edge sharp and thin.

Length $2\frac{1}{2}$ –3 millimeters. Width of pronotum $1\frac{1}{2}$ millimeters.

Hab.—Cuba and Chili, Dr. Signoret.

I am indebted to the kindness of Dr. Signoret, of Paris, for a pair of specimens of this interesting little species.

4. *M. elongatus*.

Melanæthus elongatus Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 14.

Deep black, shining, elongate-oval, the sides very parallel. Head semicircular, a little convexly rounded on the cranium, densely punctured, remotely punctured at base; submargin broadly depressed, remotely ciliated, the margin recurved; tylus very short, reaching as far as the tip of lateral lobes, a little cylindrically elevated, minutely rugulose; each side of tylus and adjoining each eye with a small sunken point. Antennæ stout, dark piceous; the joints paler at base and tip, the second joint most slender, shorter than the third; the third enlarging to the tip, a little shorter than the fourth; fifth longest. Rostrum not quite reaching to the intermediate coxæ, rufo-piceous; the second joint longest, a little compressed; the third a little shorter; fourth shortest. Pronotum subtrapezoidal, fully twice as broad as long, the lateral margins anteriorly very slightly oblique, more suddenly rounded at the

anterior angles; the edge recurved, remotely ciliated; anterior margin much less deeply emarginated than in either of the preceding species; the anterior part of disk convexly a little elevated, polished, minutely rugulose; the remaining surface coarsely punctured, not far from the posterior margin, with a deep, transverse, impressed line, connecting with a faintly impressed, coarsely punctured line running forward from just interior to the humeri; at the outer ends of the former impression are two indented more or less distinct dots; posterior margin truncated, the edge narrowly but abruptly decurved; the lateral angles rectangular. Antepectus polished, having a few small punctures; the prosternum a little carinated; the interior edge of the pleural piece also raised. Mesosternum distinctly carinated. Legs dark piceous; posterior tibiæ long and slender;—the anterior legs broken off. Scutellum extending not quite two-thirds the length of the venter, acutely narrowing toward the tip, with a transverse hump at base, and a narrower, lunate impression behind the hump; polished, minutely punctured; the lateral impressed lines broad, shallow, roughly punctured; the tip narrow, acutely rounded, a very little projecting over the membrane. Corium a little broader posteriorly, the exterior apical margin more suddenly curved inward than in the other species, the posterior margin moderately oblique, a little convexly curved near the inner angle, the outer angle very blunt, a little prolonged; surface obsoletely punctured, the sutures distinctly punctured in rows. Membrane pale brownish, hardly half as long as the corium; with three or four very indistinct nervures. Venter polished, slightly convex; the sides, connexivum, and genital segment minutely roughened and punctured; the connexivum broadly depressed, the edge prominent, trenchant.

Length $3\frac{1}{2}$ millimeters. Width of pronotum $1\frac{3}{4}$ millimeters.

Hab.—California. A single damaged female, sent to me by Henry Edwards, esq.

5. *M.?* *subglaber*.

Ethus subglaber Walker, British Museum Catal., i, p. 150, No. 17.

“Black, elliptical, shining, slightly convex. Head thickly punctured, more than half the breadth of the thorax, with a few short bristles. Eyes piceous. Antennæ piceous, less than half the length of the body; first joint and tips of the following joints tawny; joints successively increasing in length. Thorax with rather large punctures, with a few short bristles, and with a distinct transverse furrow across the whole breadth. Scutellum acute, punctured like the thorax; its length rather more than its breadth at the base. Legs rather robust; tibiæ with stout spines; tarsi tawny. Fore wings punctured like the thorax, with two striæ near the costa; membrane pale cinereous.

“Length of the body $1\frac{3}{4}$ lines.

“North America. E. Doubleday.”

The description is short, and probably not sufficiently distinctive.

Perhaps, when a fuller series of these small species has been amassed, it will be possible to recognize this form.

Nothing short of actual examination of the type will enable us to know precisely to what genus this insect belongs. As all the minute forms thus far collected, which approach the characters given above, pertain to the genus *Melanæthus*, we infer that this one will prove no exception to the general rule.

LOBONOTUS, new genus.

Elongate oval, but greatly widened in front, and with the head very long, narrow, and almost triangular. Head much longer than wide, triangularly rounded in front, the margin barely reflexed, the lateral lobes not depressed, but slanting toward the outer margin, as in many of the *Pachycoridae*; tylus narrow, long, raised a little above the lateral lobes, and forming the apex of the head; the submargin destitute of spines, but probably bristly (in perfect specimens); eyes almost inclosed by the protracted front angles of the pronotum. Rostrum very long and slender, the bucculae nearly as long as the throat, inclosing the basal joint, and obliquely widening posteriorly; the basal joint shortest; second joint slender, a very little compressed, very long, but shorter than the third; the third very long, slender, much longer than the second; fourth very slender, a little shorter than the second. Antennæ moderately long, slender; the basal joint stout, not reaching the apex of the head; second joint slender, longer than the third; third a very little stouter, and becoming thicker toward the tip. Pronotum much wider anteriorly than at base, the anterior margin very deeply sinuated to receive the head, the sides anteriorly forming long and wide lobes, the outer margins of which curve bluntly toward the head; the transverse line broad and shallow; the lateral margins bald, the edge slenderly recurved; posterior margin subtruncated. Prosternal groove deep, with steep sides, the marginal flaps arched, but not very broad. Anterior tibiae very moderately depressed, and armed on the edge with but very few spines. Ostiolar scale placed far out on the episternum, near its outer margin, broad, rounded on the outer margin, acute at the inner end, and with the osteole placed at that point. Scutellum quite long, acute, not sinuated next the tip. Corium long and narrow, the costal margin a very little curved, the edge destitute of setigerous pits; membrane short, narrow, and with few nervures.

L. anthracinus, new sp.

Deep black, shining, a little tinged with rufous on the hemelytra; head long, triangularly rounded, sloping in front and on the sides, closely, rather coarsely punctate, the base strongly convex, destitute of punctures; ocelli small, placed near the eyes and behind the line of their base; eyes large, brown, almost inclosed by the prominent angles of the pronotum. Rostrum reaching beyond the basal segments of the venter; ocherous, slen-

der; bucculae dull black, minutely scabrous, and densely, minutely punctate. Antennae piceous, pale on the edge of the incisures; the second joint longer and more slender than the third; the basal one shorter and stouter than either. Under surface of the head a little convexly prominent, roughly punctate. Pronotum highly polished, closely, a little coarsely punctate, but with a large impunctate callosity each side of the anterior lobe; sides obliquely widening anteriorly, produced anteriorly into rounded lobes, which extend almost to the front of the eyes; transverse line broad, the center broadly sunken; posterior margin very faintly curved, the humeri distinct, and the sinus narrow, longitudinal. Pleural pieces and sternum uneven, dull, rugose, and coarsely, irregularly punctate. The coxae and tumid areas of the epimera polished and rufo-piceous. Legs rufo-piceous, the spines black, and the tarsi ferruginous. Scutellum coarsely, closely punctate, a little convex at base, and a little depressed beyond the base; the basal angles each with a round, bald, polished spot. Corium tinged with rufous, densely and coarsely punctate at base and on the sutures, but more finely and obsoletely so posteriorly; the costal edge thin, closely and copiously punctate; the embolium long, smooth, longitudinally, broadly channeled; costal area narrow, at base quite slender and elevated; posterior margin bluntly oblique, faintly waved, the outer angle a little prominent; membrane white, scarcely reaching the tip of the abdomen. Venter deep black, polished, almost smooth, and obsoletely punctate on the disk and middle line, closely and roughly punctate on the sides; sides of the posterior edges of the segments minutely rough; the connexivum depressed, the edge broadly compressed and very thin.

Length 5 millimeters. Width of base of pronotum 2 millimeters.

Collected in McLennan County, Texas, by G. W. Belfrage.

This is the most singular and aberrant of all the forms of our *Cyd-nidae* yet discovered. Its head resembles that of *Eurygaster* and others of the less thick forms of the *Pachycoridae*, while the slender form of its scutellum, hemelytra, and body suggest analogies with some of the black species of several genera of the Rhyparochromid *Lygaeidae*. Thus far only two specimens, both females, have been secured.

Tribe 2.—SEHIRINI.

Femora, exclusive of the anterior pair, terete, subfusiform; tibiae with fewer and shorter spines, the anterior pair not flattened; tarsi stouter, the second joint more slender than the basal one.

SEHIRUS Amyot et Serv.

Ovate, flattened above. Head long-semicircular, the lateral lobes thin, oval, broadly upcurved, a little longer than the tylus, not meeting in front of it, but leaving a narrow emargination between their tips; the edge very narrowly recurved; the submargins neither ciliated nor spinous. Tylus gradually narrowing near the tip. Antennae rather

long and slender, the basal joint shortest, stouter than the second; second more slender, a little shorter than the third; third gradually enlarging to the tip, pubescent; fourth and fifth longer, subfusiform, pubescent, slenderly attached, the fifth a little the longest. Bucculæ not as long as the head, becoming a little higher behind, and subrectangularly terminated. Rostrum extending to the intermediate coxæ; the basal joint as long as the bucculæ; the second and third longer, subequal; the fourth subequal to the basal joint, slender. Pronotum rather flat, subtrapezoidal (in our species, triangularly narrowing toward the fore end); the transverse impressed line apparent; the lateral margins thick, recurved. Prosternal lateral carinæ obsolete; the mesosternum with a slightly elevated middle carina. Anterior tibiæ a little broadened at the tip, on the inner side of which is a short, broad groove; the inner edge with a very few, almost prostrate, short spines, the outer edge and tip with more numerous, longer spines. Odoriferous plate lanceolate, slightly curved, running two-thirds way toward the outer edge of the pleura, depressed; the osteole large, situated at the inner end of the plate. Scutellum convex at base, longer than wide, acutely narrowed toward the tip; the tip narrowed, bluntly rounded, depressed; the frenum lying close against the margin, almost percurrent. Posterior margin of corium very bluntly obliquely directed, subtruncate, feebly sinuated adjoining the inner angle. Membrane at base thickened; with about five nervures, two of which are forked at tip. Edge of connexivum thickened, compressed, a little decurved.

S. cinctus.

Pentatoma cincta Palisot de Beauvois, Ins. Afr. et Amér., p. 114, pl. viii, fig. 7.

Cydnus lygatus Say, Heteropt. New Harm., p. 10, 1.

Sehirus albonotatus Dallas, Brit. Mus. List, i, p. 127, 2.

Sehirus cinctus, Stål, Hemipt. Afr., i, p. 29 (note).

Blue-black or pitchy black, shining, rather broad-ovate. Head long, rounded and bilobate in front, the lateral lobes curved upward, the surface sunken on the middle of each; coarsely, confluent punctured, the base convexly raised, smooth, impunctured; lateral edges recurved, trenchant; ocelli brown, remote from the eyes, but still more remote from each other; eyes large, brown, half surrounded by the raised margin of the pronotum. Antennæ black, slender; the basal joint stout, shortest; the second joint rufescent; apical joint longest. Rostrum blackish-piceous, reaching to the intermediate coxæ. Pronotum flattened on the disk; the callosities coalescing, convex, forming the anterior lobe, smooth, impunctured; the remaining surface, excepting the posterior margin and raised lateral white edge, deeply, somewhat remotely punctured; lateral submargin shallowly grooved, the posterior part of it impunctured; humeri acutely prominent, the posterior margin interiorly to them a little impressed; transverse impression broad, not reaching the lateral margins; the lateral margins obliquely ap-

proaching the head, anteriorly a little curved; the anterior angles a little rounded. Pectus deep black, polished, coarsely punctured on the disks of the areas; the odoriferous apparatus dull black. Legs piceous-black; the outer face of all the tibiæ with an abbreviated white streak; the bristles yellowish; tarsi piceous. Scutellum polished, remotely, coarsely punctured on the middle, each side, and some transverse series posteriorly confluent punctured; frenum and extreme tip piceous, the latter a little impressed, broadly rounded. Corium coarsely, regularly punctured, the punctures a little more remote and shallow on the posterior part of disk; the costal margin white; near the outer angle is a sublunate, smooth, white spot; posterior margin subtruncate, faintly sinuated adjoining the inner angle; membrane brown, the base running toward the inner angle thickened; the nervures numbering about five, sometimes two of them are forked at tip. Venter polished, moderately convex, densely, finely punctured each side and behind, including the depressed submargin of the connexivum; the disk impunctured; the edge of the connexivum smooth, white as far as the third segment, sometimes white all the way to the base.

Length 5-7 millimeters. Width of base of pronotum $2\frac{1}{2}$ - $3\frac{1}{4}$ millimeters.

Hab.—Almost all of the United States, as also Canada and Mexico.

Specimens occur with no spots on the corium, with the spots reduced to mere points, or with a spot only on one wing-cover.

Hundreds of specimens of these insects have passed through my hands, and I have thus had abundant materials for work in this species. The result of these examinations induces me to believe that we have only thus far discovered one species in North America.

The males usually have a smaller emargination between the lobes of the head, although the form of these parts varies in both sexes. The males are most frequently destitute of the white spots of the hemelytra, but occasionally the females also lack them.

Subfamily ASOPINÆ.

PERILLUS Stål.

P. claudus.

Pentatoma clauda Say, Journ. Acad. Phila., iv, 312, No. 2.

One specimen from the vicinity of Colorado Springs; also a few from the region near Denver, collected by Mr. B. H. Smith. The pale variety is the one thus far found most common in Eastern Colorado. In the darker specimens, the ground-color is a rich red, and the black markings are often tinged with violet and indigo.

Evidently, the pale variety would be better protected by its agreement with the sand-color of the plains on which it occurs, and perhaps this is the reason why it is so much more abundant in such places. The darker variety would be better protected in the red surfaces of the Triassic regions, and in places where the soil is stained by oxides of iron. Its enemies, such as the *Phrynosoma*, the various species of

Sceloporus, *Cnemidophorus*, etc., are sharp-sighted and ready, and doubtless the pattern of marking and colors are just such as to place it in closest harmony with its surroundings. It is not unknown in Kansas, and all the specimens that I have yet seen from that State are larger than those from Eastern Colorado; while others from New Mexico and Arizona have been large, like those from the vicinity of Laramie.

PODISUS Stål.

1. *P. modestus*.

Arma modesta Dallas, British Mus., List Hemipt., i, 101, No. 13.

Podisus modestus Stål, Enumeratio Hemipt., i, 51, No. 13.

A few specimens were swept by me from bushes in Beaver Brook Gulch and in Clear Creek Cañon during the early part of August. The specimens were of the usual pale yellow color, marked and punctate with red, and with the black vitta of the membrane and spots of the connexivum clearly defined and very apparent.

2. *P. spinosus*.

Arma spinosa Dallas, British Mus. List Hemipt., i, p. 93, No. 7.

Podisus spinosus Stål, Enum. Hemipt., i, 51, No. 12.

One specimen from near Pueblo, Colo. This region near the Arkansas River, except in its alkaline soil, resembles the river-bottoms and lowlands adjacent to creeks in the country southeast of Baltimore. The first insects that I there saw flying, and most of those which I swept from the bushes and plants, were such as I was accustomed to find common near my home; but away from the vine-clad river-bed, the fauna was quite different. There the Sunflowers, *Mentzelias*, *Euphorbias*, and other flowers of the plains, yielded another set of insects; and although many of these were different from those I had found near Denver, yet some of the same kinds were present, of such forms as were the most widely distributed.

This species did not occur on the plains proper, but was swept from a bush in the bed of the river, at a point where there had been an overflow into a depression of the surface.

LIOTROPIS, new genus.

Broad-oval; the pronotum wide and gently sloping toward the anterior margins, with the lateral angles wide and lobate. Head depressed, narrow; the lateral lobes almost lamellar, separated by a cleft in front of the tylus; tylus acute at tip, much shorter than the lateral lobes; ocelli placed near the eyes and behind the line of their base; antennæ slender, the basal joint not reaching the tip of the head, the second joint shorter, and the third very much longer than either of the others. Bucculæ very narrow, a little shorter than the head, sinuated at base; rostrum starting at the base of the lamellar cheeks, slender, not broadly depressed, the basal joint inclosed by the bucculæ; second joint slender, a little compressed, longest, reaching to the base of the prosternum;

the third wider and a little shorter; fourth wide, a little shorter than the third. Pronotum very short and wide, sublobate at the lateral angles. Ostiolar canal starting at about the end of the first third of the episternum and running through the second third, broad at base, with the ostiole at that point widely open and grooved, tapering rapidly, and terminating in a slender carinate line. Scutellum broad and short, the tip wide and bluntly rounded. Posterior margin of the corium long, obliquely rounded; membrane with seven or eight longitudinal nervures.

L. humeralis, new sp.

Pale testaceous, or clay-yellow, tinged with orange; form broad-oval, with very prominent lateral angles. Head long and narrow, lamellate, broadly rounded, deeply cleft in front, slenderly margined with black, remotely punctate with red or brown, the punctures a little confluent on the vertex, but leaving a nude line on the tylus and an oval spot between the eye and ocellus, the spot bounded with a black line; tylus very much shorter than the lateral lobes, very remotely punctate, and with a short line of punctures each side, its apex acutely tapering at tip. Under side of head with a short black line in front of each eye; the tooth on the base of the antennæ stout, rufous, black at base on the upper side. Antennæ rufous; the basal joint stout, fusiform, a little longer than the second; the second very short; the third longer than the two preceding together; fourth and fifth subequal, each a little shorter than the third. Rostrum rufous, reaching between the middle coxæ, piceous at tip. Pronotum very short, very wide, testaceous, punctate with red and black, the punctures confluent in large spots near the outer sides and a little confluent in transverse rows on the disk; anteriorly each side of the middle with a round black spot, and the posterior lobe clouded with brown; humeral lobes produced, triangularly rounded, tinged with rufous, the edge posteriorly black; lateral margins deeply sinuated anteriorly, pale, with a very small tooth at the anterior angle, and before it some faint traces of serrations; humeri tubercular, the latero-posterior margins broadly sinuated; pleural pieces generally very coarsely punctate. Legs pale yellow, the tibiæ and tarsi tinged with ochreous. Scutellum testaceous, a little coarsely punctate with pale brown, the punctures placed in uneven, somewhat transverse rows; next the margin each side posteriorly with a blackish cloud, and sometimes a fainter one next the tip; the sides feebly sinuated, the apex wide and broadly rounded. Corium wide, coarsely, remotely punctate with black, with a few bald spots on the disk and on the costal area, the base and inner angle tinged with red; costal margin broadly bowed from a little way behind the base to the tip; embolium rufous, unevenly punctate; membrane a little bronzed. Tergum rufous, the connexivum orange, with a small black spot at the outer and posterior angle of each segment; venter pale yellowish, remotely punctate; anal segment of the female with a short black line each side on the posterior margin.

Length $6\frac{1}{2}$ –8 millimeters. Width between the tips of angles of the pronotum $4\frac{1}{2}$ – $5\frac{1}{4}$ millimeters.

From Eastern Massachusetts, near Charlestown, Andover, and Lynn. Beaten by myself from small oaks at Egg Harbor, N. J., in August; and, during the same month, also obtained from bushes near Manitou, Colo.; Maryland, June 28 and September 30, on *Carya*; also in Georgia.

This beautiful little species resembles the genus *Euschistus* in that part of the group represented by *E. tristigma* Say. It also forms a connecting link between the *Asopinæ* and the group represented by the genus *Euschistus*, having the lobate head and narrow rostrum of the latter, with the general structure of the former. As it roams so widely, and over a multitude of plants and trees, we believe it to be carnivorous, like its brethren of the genus *Podisus*. The place of its occurrence near Manitou was in the valley, where the surface was well overgrown with small oaks and a great variety of bushes, adjacent to the Fountain Creek.

Subfamily HALYDINÆ.

PRIONOSOMA Uhler.

P. podopioides.

Prionosoma podopioides Uhler, Proc. Entom. Soc. Phila., 1863, ii, 364.

A single specimen occurred to me while sweeping the bushes near Golden, Colo., in August. Specimens have been sent to me from Denver by Benjamin H. Smith. It inhabits Arizona, Nevada, and California.

Subfamily PENTATOMINÆ.

NEOTTIGLOSSA Kirby.

1. *N. undata*.

Pentatoma undata Say, Heteropt. New Harmony. 8, No. 17; Complete Writings, i, 319, 17.

Common in Massachusetts, Illinois, Minnesota, etc. One specimen occurred to me in Clear Creek Cañon in August.

This species was previously referred by me to the *Neottiglossa trilineata* Kirby. The latter, however, seems to be a species sufficiently distinct from the preceding to justify its separation.

2. *N. trilineata*.

Pentatoma (Neottiglossa) trilineata Kirby, Fauna Boreali-Amer., iv, 276, pl. 6, fig. 6.

Aelia trilineata Dallas, British Museum List Hemipt., i, 224, No. 6.

Inhabits Dakota, British Columbia, Canada, Nebraska, and the region of the Mackenzie River.

It differs from the preceding in being larger and more robust and blunt anteriorly, the head entirely black and more coarsely punctate, the venter more widely black, and the femora much more invaded with black. A single specimen was sent to me from the vicinity of San Francisco by James Behrens.

This species has much the appearance of *Apariphe intermedia* Fieber of Europe, but it does not belong to that genus.

MELANOSTOMA Stål.

M. sulcifrons.

Melanostoma sulcifrons Stål, Enum. Hemipt. ii, 18, No. 2.

This odd little Pentatomid has recently been found in very remotely separated regions of the United States: first in Texas and Indian Territory; then in the valley of the Arkansas River; also in Georgia; in New Mexico; and last summer, in July, I swept numerous specimens of it from weeds in a pasture-field sixteen miles southeast of Baltimore.

COSMOPEPLA Stål.

C. carnifex.

Cimex carnifex Fab., Ent. Syst. Suppl., 535, No. 162.

Cosmopepla carnifex Stål, Enum. Hemipt., ii, 19, No. 1.

I obtained one specimen in the region of the Arkansas River, near Pueblo, by sweeping weeds with my net. It is common in certain sections of Texas, in Indian Territory, in Kansas, in Missouri, and in the Atlantic region.

Its nearest neighbor, the *C. conspicillaris*, belongs to the more mountainous regions, and occurs particularly on the west of the Rocky Mountain Ranges.

MORMIDEA Amyot et Serv.

M. lugens.

Cimex lugens Fab., Syst. Ent., 716, No. 98.

Mormidea lugens Stål., Stettiner Ent. Zeit., xxiii, 103, No. 73.

It occurred to me while I was sweeping the weeds in the vicinity of Cañon City, Colo.; also inhabits Texas and the Indian Territory, near Cheyenne, and in many parts of the country east of the Rocky Mountains from the Red River country to the vicinity of Quebec, and thence along the Atlantic coast to Florida, and even into Cuba and Mexico.

EUSCHISTUS Dallas.

1. *E. servus.*

Pentatoma serva Say, Heteropt. New Harmony, 4, No. 5.

Euschistus servus Stål, Enum. Hemipt., ii, 26, No. 19.

From the vicinity of the Arkansas River in Colorado, August. Common in Texas and the Southeastern United States.

E. variolarius.

Pentatoma variolaria Palisot-Beauvois, Ins. Afr. et Amér., 149, pl. 10, fig. 6.

Pentatoma punctipes Say, Journ. Phila. Acad., iv, 314, No. 5; Complete Writings, ii, 241, No. 5.

Euschistus variolarius Stål, Enum. Hemipt., ii, 26, No. 22.

A single specimen from near Denver, August 18.

CHLOROCHROA Stål.

C. sayi.

Chlorochroa sayi Stål, Enum. Hemipt., ii, 33, No. 6.

Near Golden, Colo., August 6.

TRICHOPEPLA Stål.

1. *T. semicittata*.

Pentatoma semirittata Say, Heteropt. New Harmony, 9, No. 21.

Pentatoma pilipes Dallas, British Mus. List Hemipt., ii, 247, No. 37.

Trichopepla semirittata Stål, Enum. Hemipt., ii, 34, No. 1.

From the vicinity of the Arkansas River in Colorado, August 10, swept from weeds.

2. *T. atricornis*.

Trichopepla atricornis Stål, Enum. Hemipt., ii, 34, No. 2.

A single specimen from northeast of Denver, August 18. This species is broader and more regularly oval than the preceding, but it belongs more particularly to the north and west of North America than that species. Specimens were collected in the vicinity of the Yukon River and in the Mackenzie River region by Robert Kennicott; others occurred near Lake Winnipeg, in California, in Illinois and in Wisconsin.

PERIBALUS Muls.

P. limbolarius.

Peribalus limbolarius Stål, Enum. Hemipt., ii, 34, No. 1.

Peribalus modestus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 396.

This species was moderately common in the nymph stage, upon several kinds of flowering plants, on August 6-8, in Beaver Creek Gulch and in Clear Creek Cañon. A few days later, I found the imago on plants near Colorado Springs and at Manitou; on August 11, I took several specimens while sweeping the plants in the mouth of the Arkansas Cañon.

It varies somewhat in the amount of black upon the two last joints of the antennæ; in the presence, or not, of black upon the acetabular caps; and in the blackish reticulation upon the corium. The membrane is either bronze or almost hyaline.

HOLCOSTETHUS Fieber.

H. abbreviatus.

Holcostethus abbreviatus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 397.

I found a few specimens of the nymph, August 6, in Beaver Brook Gulch. A fine imago, from near Salt Lake, Utah, was given to me by Mr. S. H. Peabody.

THYANTA Stål.

1. *T. rugulosa*.

Pentatoma rugulosa Say, Heteropt. New Harmony, 7, No. 16.

This beautiful little species was moderately common in Clear Creek Cañon and in Beaver Brook Gulch, August 6-8. It occurred upon the wild gooseberry, and upon several kinds of bushes which grew near the running streams. Several spots in the latter locality consisted of loose blackish soil, which supported a rank vegetation, and it was upon this that these and some other *Hemiptera* were most abundant.

2. *T. custator*.

Cimex custator Fab., Syst. Rhyng., 164, No. 43.

Pentatoma calceata Say, Heteropt. New Harmony, 8, No. 19; Complete Writings, i, 320, No. 19.

Pentatoma custator H.-Schf., Wanz. Ins., vii, 96, fig. 771.—Dallas, British Mus. List Hemipt., i, 25.

Thyanta custator Stål, Enum. Hemipt., ii, 34, No. 2.

One specimen from near Manitou, Colo., August 16. The specimens that I have thus far seen from Eastern Colorado have been of a pale sickly green, with the yellow or rufous of the pronotum not very distinct.

3. *T. perditor*.

Cimex perditor Fab., Entomologia Systematica, iv, 102, No. 90.

Thyanta perditor Stål, Enum. Hemipt., ii, 34, No. 1.

One specimen from near Pueblo, Colo., August 10. The form from Eastern Colorado has a shorter lateral tooth to the pronotum than that of Mexico and the West Indies. Several specimens from Arizona vary in the length of these processes, but in none are they so long as in those from Cuba and San Domingo. In Western Hayti, they occur quite abundantly in the neglected and weedy parts of gardens. A few specimens were obtained by myself in that country from the Palma Christi, or castor-oil plant. In the tropics, they acquire their richest green ground-color with the bright carmine band upon the pronotum.

MURGANTIA Stål.

M. histrionica.

Strachia histrionica Hahn, Wanz. Ins., ii, 116, fig. 196.

Murgantia histrionica Stål, Enum. Hemipt., ii, 37, No. 4.

This widely distributed pest of the vegetable garden is now sufficiently common in Colorado to be of serious injury to the farmers. I found specimens near Denver in the region of irrigation, and also near the city of Golden, August 6. Dr. Packard also took specimens at the latter locality on July 3. No specimens occurred to me south of Denver. Perhaps the reason why I did not find it elsewhere was owing to the fact of the first brood being over, and the time had not arrived for the appearance of the second brood. I swept the weeds on the cultivated grounds west of Colorado Springs, and also in the valley of the Arkansas River near Pueblo, and from the vicinity of Cañon City up to and in the Grand Cañon of the Arkansas, but I did not meet with specimens in either of those places.

BANASA Stål.

B. calva.

Pentatoma calva Say, Heteropt. New Harmony, 7, No. 13.

Rhaphigaster catinus Dallas, British Mus. List Hemipt., i, 232, No. 25.

I obtained the larva in Clear Creek Cañon August 6, and Dr. Packard found the imago near Blackhawk, Colo., on July 2.

Subfamily CHARIESTERINÆ.

CHARIESTERUS Laporte.

C. antennator.

Coreus antennator Fab., Syst. Rhyng., 193, No. 33.

Genocerus dubius Say, Heteropt. New Harmony, 10.

Chariesterus mæstus H.-Schf., Wanz. Ins., vii, 3, fig. 631.

Chariesterus antennator Dallas, Brit. Mus. List Hemipt., ii, 510, No. 1.

One specimen occurred to me at Manitou, upon a small oak-tree, August 13. It often occurs upon bushes in the Atlantic region, in localities adjoining open woods, and about groves of trees in the low meadows. When fresh and not weather-beaten, it is thickly powdered beneath with a white mealy substance. Occasionally, it occurs upon the Golden-rod, in the pollen and flowers of which it deeply buries itself, so as to be almost out of the reach of sight. Its gray ground-color and white covering do not, however, afford it any protection from the entomological collector who examines flowers on their under sides.

Subfamily COREINÆ.

MARGUS Dallas.

M. inconspicuus.

Syromastes inconspicuus H.-Schf., Wanz. Ins., vi, 14, fig. 570.

Margus inconspicuus Stål, Stettiner Ent. Zeit., xxiii, 303; Enum. Hemipt., i, 184, No. 1.

One specimen from near Manitou, August 13. It ranges northward from Mexico into California, Arizona, New Mexico, and specimens have been sent to me from Denver (probably collected in that vicinity) by B. H. Smith. It varies much in depth of color and markings, and somewhat in the breadth of its outline.

CHELINIDEA Uhler.

C. vittigera.

Chelinidea vittiger Uhler, Proc. Entom. Soc. Phila., ii, 366.

Chelinidea vittigera Stål, Enum. Hemipt., i, 180.

One specimen from beneath a mass of Prickly-pears on the hill-side near Colorado Springs, August 10.

CATORHINTHA Stål.

C. mendica.

Catorhinta mendica Stål, Enum. Hemipt., i, 187, No. 2.

Obtained by Dr. Packard near Golden, Colo., July 3, 1875. Probably the season for this insect was over when I reached Golden in August, as I failed to find specimens of it by any of the methods usually adopted in collecting.

ANASA Amyot et Serv.

A. tristis.

Cimex tristis De Geer, Mémoires, iii, 340, pl. 34, fig. 20.

Coreas ordinatus Say, Journ. Acad. Phila., iv, 318, No. 2.

Anasa tristis Stål, Hemipt. Fabr., i, 56, No. 3.

Taken beneath rubbish on one of the farms a few miles west of Denver, Colo., August 18. It was not common there, and I failed to find specimens in any of the other places which I visited during my stay in Colorado.

Subfamily ALYDINÆ.

ALYDUS Fab.

1. *A. eurinus*.

Lygæus eurinus Say, Journ. Acad. Phila., iv, 324, No. 5.

Alydus ater Dallas, Brit. Mus. List Hemipt., ii, 478, No. 30, ♀.

This is not *Alydus eurinus* Stål (Enum. Hemipt., i, 213, No. 3), but is the most closely related to *A. calcaratus* Linnæus of Europe. A single specimen was collected by Dr. Packard near Manitou, Colo., July 15. Several specimens obtained near Denver were given to me by Mr. B. H. Smith.

2. *A. pluto*.

Alydus pluto Uhler, Hayden's Survey of Montana, 404, No. 2.

One specimen occurred to me west of Denver, August 9.

MEGALOTOMUS Fieb.

M. quinquespinosus.

Alydus 5-spinosus Say, Journ. Acad. Phila., iv, 323, No. 4.

Alydus cruentus H.-Schf., Wanz. Ins., viii, 100, fig. 858.

Megalotomus quinquespinosus Stål, Enum. Hemipt., i, 214, No. 4.

Collected by Dr. Packard in the American Fork Cañon, Utah, on July 22.

Subfamily BERYTINÆ.

NEIDES Latr.

1. *N. spinosus*.

Berytus spinosus Say, Amer. Entom., i, pl. 14.

Neides trispinosus Hope, Catal. of Hemipt., ii, 24.

Not uncommon in the valley of the Arkansas east of Cañon City, August 11. It occurred in places slightly wooded, where wild grape-vines abounded.

2. *N. muticus*.

Berytus muticus Say, Heteropt. New Harmony, 13.

Neides decurratus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 402.

Several specimens were found by me in Clear Creek Cañon at the entrance to Beaver Brook Gulch, August 7. They were flying in the bright sunlight, and might easily have been taken for *Tipulidæ*.

Subfamily PSEUDOPHLEGINÆ.

DASYCORIS Dallas.

D. humilis.

Dasycoris humilis Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 403.

One specimen from near Golden, Colo., August 6.

Subfamily RHOPALINÆ.

HARMOSTES Burm.

1. *H. reflexulus*.

Syromastes reflexulus Say, Heteropt. New Harmony, 10, No. 1.

Harmostes costalis H. Schf., Wanz. Ins., ix, 270, fig. 992.

Harmostes virescens Dallas, Brit. Mus. List Hemipt., ii, 520, No. 1.

Harmostes reflexulus Stål, Enum. Hemipt., i, 220, No. 4.

A few specimens occurred to me while I was sweeping the weeds on the hills west of Denver on August 5, and also beyond Cañon City, August 11; also, at Colorado Springs, August 16.

2. *H. serratus*.

Acanthia serrata Fab., Ent. Syst., iv, 75, No. 32.

Harmostes perpunctatus Dallas, Brit. Mus. List Hemipt., ii, 524, No. 3.

Harmostes serratus Stål, Hemipt. Fabr., i, 67, No. 1.

One specimen from Manitou, July 15, collected by Dr. Packard.

AUFEIUS Stål.

A. impressicollis.

Aufeiuss impressicollis Stål, Enum. Hemipt., i, 222.

Swept from the bushes on the suburbs west of Denver, August 18. It was not common, and I did not meet with it in any other place. Some of the more mature specimens are powdered beneath with a white mealy substance.

CORIZUS Fallen.

1. *C. hyalinus*.

Lygæus hyalinus Fab., Entom. Syst., iv, 163, No. 115.

Rhopalus truncatus Fieber, Europ. Hemipt., 234, No. 4.

Corizus hyalinus Stål, Hemipt. Fabr., i, 63, No. 2.

Corizus viridicatus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 404.

This species is very widely distributed in Eastern Colorado; at least that is the case with the variety which I described under the name of *viridicatus*. It lodges in the flowers of various weeds and flowers, and seems to be common upon the plains, foot-hills, and parks in the mountains. It was less abundant in Clear Creek Cañon, but was found everywhere west of Denver, around Colorado Springs, and near Manitou. It lived singly in the crowns of small flowers in Manitou Park, and was common upon weeds in the Arkansas Valley and near the mouth of the cañon of the Arkansas from August 4 to 19. I failed to find it on the plains near Bijou. Dr. Packard found it at Golden July 3, and on Arapahoe Peak, 11,000 to 12,000 feet above sea-level, on July 1.

2. *C. lateralis*.

Coreus lateralis Say, Journ. Acad. Phila., iv, 320, No. 4.

Corizus lateralis Signoret, Ann. Soc. Ent. France, sér. 3e, vii, 97, No. 36.

Swept from weeds on the low hills near Colorado Springs August 18.

3. *C. nigristernum*.

Corizus nigristernum Signoret, Ann. Soc. Ent. France, sér. 3e, vii, 100, No. 41.—
Stål, Enumeratio Hemipt., i, 225, No. 20.

One specimen obtained by Dr. Packard from near Golden July 3.

LEPTOCORIS Hahn.

L. trivittatus.

Lygæus trivittatus Say, Journ. Acad. Phila., iv, 322, No. 2.

Leptocoris trivittatus Stål, Enum. Hemipt., i, 226.

Although very common in Arizona and California, I did not find many specimens in Colorado. It was not until August 11, at Cañon City, that I met with it, and then only at the roots of Cacti and Yuccas. Dr. Packard found it in the American Fork Cañon, Utah, on July 22. One specimen from Cañon City lacks the discoidal red vitta of the corium.

Family LYGÆIDÆ.

LYGÆUS Fab.

L. reclinatus.

Lygæus reclinatus Say, Journ. Acad. Phila., iv, 321, No. 1.

Lygæus (Graptolomus) reclinatus Stål, Enum. Hemipt., iii, 107.

This species, although dwelling upon the *Asclepius*, is found scattered over the plains in many places and in a less degree upon the high peaks of the mountains in Colorado. I met with it almost everywhere, from Denver to Cañon City, August 6 to 18. Frequently after the rain-storms it would be found hidden beneath chips and rubbish on the ground, in the cañons and on the mountain-sides, and sometimes it was stowed away with various other insects among the roots of Yuccas, near Colorado Springs and Manitou. One specimen was swept from weeds growing close to a bunch of *Asclepius* in the mouth of the Arkansas Cañon.

Dr. Packard collected it near Boulder, June 27; on Arapahoe Peak, 11,000–12,000 feet above the sea, July 1; at Manitou, July 15; on summit of Pike's Peak, 13,000 feet, July 14; Garden of the Gods, July 13; and on Gray's Peak, about 14,000 feet altitude, July 7.

MELANOCORYPHUS Stål.

M. facetus.

Lygæus facetus Say, Heteropt. New Harmony, 13, No. 2.

Melanocoryphus facetus Stål, Enum. Hemipt., iv, 113, No. 9.

A few specimens were swept by myself from Yuccas near Denver; but they were most common near Colorado Springs August 13–17, and were generally in shelter beneath dried dung, chips, stones, or about the roots of Yuccas. Sometimes, after a rain, or snow-storm, accompanied by high

winds from the mountains, insects of several orders would be found crowded together around and under the roots of grasses and similar plants, as well as under small stones, etc. Many *Diptera* and *Hymenoptera* were thus collected in company with the Beetles and *Hemiptera*.

Subfamily NYSIINÆ.

NYSIUS Dallas.

1. *N. californicus*.

Nysius californicus Stål, Eugenies Resa. Hemipt., 242, No. 56.

Found sparingly on weeds in moist places, as well on the plains as in the cañons and parks. I swept specimens from flowers on the west of Denver, in Clear Creek Cañon, near Manitou and Colorado Springs, and more abundantly near Cañon City. A few specimens occurred singly on a low composite pale whitish flower in Manitou Park, August 14. Dr. Packard collected it near Golden, July 3.

2. *N. angustatus*.

Nysius angustatus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 406, No. 2.

It occurred to me in great abundance upon tall weeds in cultivated grounds, near Denver, at Golden, in Manitou Park, and near Cañon City, August 6-18. Dr. Packard found it near Golden, July 3.

Subfamily CYMINÆ.

ISCHNORHYNCHUS Fieb.

I. didymus.

Iygicus didymus Zett., Vet. Akad. Handl., 1819, 71, No. 20.

Ischnorhynchus didymus Stål, Enum. Hemipt., iv, 124, No. 1.

This is a common European insect, but it is now to be found sparingly all over the length and breadth of the United States. I collected one specimen near Denver and another near Cañon City.

CYMUS Hahn.

C. luridus.

Cymus luridus Stål, Enum. Hemipt., iv, 126, No. 1.

One specimen was swept by me from weeds in the vicinity of the Arkansas River, east of Cañon City, August 11. It is a common species in many parts of the Atlantic region.

Subfamily GEOCORINÆ.

GEOCORIS Fallen.

1. *G. bullatus*.

Talda bullata Say, Heteropt. New Harmony, 18, No. 2.

Collected around the roots of weeds on the foot-hills and plains west of Denver, August 18. The very pale varieties of this species occur upon the light-colored sand; those from the cañons and mountain altitudes are darker. Full series of these varieties are needed to settle the

synonymy of this species and its allied forms. Some links pointing to a connection with *G. pallens*, *borealis*, and *discopterus* have already been procured, and doubtless still others will occur when closer attention is given to collecting them. Occasionally, they may be swept with the net from low bushes and weeds near woods and streams, on the hill-sides, and in the mountains; and elsewhere they will be found near the roots of plants and among small stones in sandy places. The darker-colored ones affect the dark sandy loam formed by the grinding currents of the rapid streams in the cañons and gulches.

2. *G. uliginosus*.

Salda uliginosa Say, Heteropt New Harmony, 19, No. 3.

Ophthalmicus niger Dallas, Brit. Mus. List Hemipt., ii, 586, No. 9.

Ophthalmicus lateralis Fieber, Wien. Entom. Monats., v, 271, No. 9.

This is the commonest species found in the Atlantic region. It occurs on the ground in dark loamy spots, in woods and near streams, often in places exposed to the sun, and around the roots of *Solanum carolinense*.

Only a very few specimens have thus far been brought from the region near the Rocky Mountains. I obtained one specimen from Denver, August 5.

3. *G. decoratus*, new sp.

Narrow-subovate; prevailing color black, polished. Head wider than the pronotum, the eyes obliquely very prominent, brown, large; face deep black, very closely and finely punctate, the apex of the tylus and cheeks pale yellow; antennæ slender, black, the joints terminated with white, the apical joint dusky; rostrum reaching to the posterior coxæ, piceous-black. Pronotum transverse, very slightly narrower in front, the sides of the anterior margin obliquely truncated, with the angles scarcely rounded, black, very coarsely punctate, almost flat, the anterior edge and a small spot on its middle, the lateral margin, the humeral angles broadly, and a large spot on the middle of the posterior margin ivory-like and pale yellow; callosities transverse, impunctate, highly polished, and deep black. Sternum and pleural pieces deep black, the latter polished, less coarsely, but densely, in part confluent, punctate; a quadrangular spot above each acetabular cap, the osteole and the apexes of the coxæ white, gular collum white; femora blackish-piceous, testaceous at tip; tibiæ dusky at base, the remainder and the tarsi paler, with the tip of the apical joint and the nails piceous. Scutellum black, coarsely and moderately closely punctate, the margins, particularly at tip, tinged with testaceous. Hemelytra pale yellowish, punctate with brown, and with a brown cloud on the disk posteriorly, and two brown streaks on the posterior margin; membrane short, white. Abdomen black, very minutely punctate and pubescent.

Male generally paler, with more whitish-yellow on the front of the face; the whole basal half of pronotum pale; the legs yellow, pointed

with brown; and the margins of the meta-pleura more widely white; antennæ sometimes whitish.

Length to tip of venter 3-4 millimeters. Width of base of pronotum 1-1½ millimeters.

I collected a few specimens in Clear Creek Cañon, August 3, in warm, sunny spots in the dark sand.

Subfamily PACHYGRONTHINÆ.

ÆDANCALA Amyot et Serv.

O. dorsalis.

Pamera dorsalis Say, Heteropt. New Harmony, 17, No. 8.

Ædancala dorsilinea Amyot et Serv., Hemipt., 253, pl. 12, fig. 6.

Found in the valley of the Arkansas near Cañon City. It seems to be rare there, unless the season was too far advanced for its appearance. On the eastern side of the continent, it appears to be single-brooded, and is rarely found later than in the early part of summer.

Subfamily MYODOCHINÆ.

PTOCHIOMERA Say.

P. puberula.

Ptochiomera puberula Stål, Enum. Hemipt., iv, 153, No. 8.

One specimen from near Denver, August 8.

LIGYROCORIS Stål.

L. sylvestris.

Cimex sylvestris Linn., Fauna Suec., 256.

Ptochiomerus diffusus Uhler, Proceed. Boston Soc. Nat. Hist., 1871, p. 9.

Pamera contracta Say, Heteropt. New Harmony, 16, No. 2.

One specimen from near Maniton, August 15. Although usually common in the places which it frequents, I was disappointed in failing to find more than this single specimen. It occurs under such varied climate and physical conditions as to make it a good subject for study in determining the kind and amount of change brought about in this type of structure by such influences. In Europe, it is found, in its more northern range, in Sweden and Finland, and, in its central and southern range, in Austria, Central Germany, Switzerland, and France. Thus, as in North America, it extends over several degrees of latitude, including varieties of altitude, and accordingly being subjected to contrasting conditions of climate and temperature.

MYODOCHA Latr.

M. serripes.

Myodocheus serripes Oliv., Encyc. Méthod., viii, p. 106.

Myodocha petiolata Say, Heteropt. New Harmony, 19.

One specimen from the valley of the Arkansas River, east of Cañon City, August 11. These insects are usually abundant in the places which they select, and although I met with many spots which in the

Atlantic region would have been favorable for them, in this instance I was rewarded by the finding of only a single specimen.

On the eastern side of the continent, it extends from Maine to Florida, and thence westward through Texas into Mexico.

HERÆUS Stål.

H. insignis.

Heræus insignis Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 407.

From near Golden, Colo., at the mouth of the Clear Creek Cañon, August 7.

The orbicular anterior lobe of the pronotum is quite remarkable in this insect. In that respect it is quite unlike either of its congeners, and in a degree repeats the form of pronotum seen in *Araphe* H.-Schf. Specimens occasionally occur with a chestnut-red pronotum, but the fully matured individuals have that part black, and more or less tinged with grayish.

TRAPEZONOTUS Fieber.

T. nebulosus.

Lygæus nebulosus Fallen, Monog. Cim., 65, No. 7.

Pamera fallax Say, Heteropt. New Harmony, 17, No. 6.

Trapezonotus nebulosus Fieber, Europ. Hemipt., 190.

Moderately common at Denver, and a few specimens were swept from plants in Beaver Brook Gulch, August 6. It varies very much in the breadth of its outline, and somewhat in the distinctness and breadth of the whitish markings of the scutellum and hemelytra. The species is common in many parts of Europe.

EMBLETHIS Fieber.

E. arenarius.

Cimex arenarius Linn., Fauna Suec., 955.

Emblethis arenarius Fieber, Europ. Hemipt., 198, No. 2.

Quite common in Eastern Colorado, as well upon the plains and foothills as in the mountains. I found it near Denver, and also in Clear Creek Cañon, August 6. Dr. Packard obtained a specimen upon the summit of Arapahoe Peak, 13,000 feet above the level of the sea, on July 14.

Subfamily HETEROGASTRINÆ.

HELONOTUS Uhler.

H. abbreviatus.

Helonotus abbreviatus Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 47.

Two specimens collected in Clear Creek Cañon, August 6. One individual is more slender and paler than usual; but, as I possess several specimens showing intermediate characters, it should probably not be regarded as a new species.

This insect lives on the red clover, and sometimes occurs in these fields, in the vicinity of Baltimore, in swarms of untold numbers. It is generally coated with a white powder, which easily rubs off, and sometimes it is covered with the pollen of the flowers over which it runs.

Family PHYTOCORIDÆ.

MONALOCORIS Dahlb.

M. filicis.

Cimex filicis Linn., Syst. Nat., ii, 718, No. 20.

Acanthia filicis Wolf, Icon. Cim., 46, tab. 5, fig. 43.

Bryocoris filicis Kolenati, Meletemata Entom., ii, 129.

Monalocoris filicis Fieber, Europ. Hemipt., 237.—Douglas and Scott, British Hemipt., 279, pl. 10, fig. 2.

One specimen from the mountains adjoining Clear Creek Cañon, August 6. It was swept from a small fern which grows in damp places among the rocks high up in the mountains near Beaver Brook.

BRACHYTROPIS Fieber.

B. calcarata.

Miris calcaratus Fallen, Hemipt. Suec., 131, No. 5.

Brachytropis calcaratus Fieber, Europ. Hemipt., 241.

Near water, in weedy places, on the outskirts of Denver, Colo., August 4.

TRIGONOTYLUS Fieber.

T. ruficornis.

Miris ruficornis Fallen, Hemipt. Suec., i, 133, No. 8.

Trigonotylus ruficornis Fieber, Europ. Hemipt., 243.

Some specimens of the normal type occurred upon weeds and grass in damp situations near Denver, and also on the hills near water a few miles west of Denver.

MIRIS Fieber.

M. instabilis.

Miris instabilis Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 50.

The yellow variety occurred upon the weeds near water in the suburbs of Denver. A beautiful green variety, strongly marked with fuscous, was collected from rank-growing plants in Beaver Brook Gulch, August 6.

PHYTOCORIS Fallen.

1. *P. nubilus.*

Capsus nubilus Say, Heteropt. New Harmony, 22, No. 10.

Phytocoris nubilus Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 51.

A single specimen from near Denver, August 4.

2. *P. inops*, new sp.

More slender than *P. nubilus*, and more regularly elliptical, with the sides of the pronotum more oblique and not sinuated. Color pale ash-gray or light brown; the legs and antennæ very slender. Head long, triangular anteriorly, pale yellow, spotted with brown, the cheeks margined with brown, and the tylus with a reddish-brown spot, the upper surface clothed with grayish hairs; bucculæ dark brown; rostrum reaching the middle of the venter, slender, distinctly compressed at base, pale yellow, tinged with brown near the base and at tip, the basal joint much longer than the head, the second and fourth longer,

subequal, the third about equal to the basal one. Antennæ very slender, setaceous, long, the basal joint cylindrical, not thicker toward the tip, and very indistinctly thickened near the base, about as long as the head and pronotum united, pale yellow, mottled and obliquely banded with brown, and dark fuscous at tip; the second joint one grade more slender, evenly filiform, a little more than twice the length of the first, brown, banded at base and on the middle with pale yellow; following joints very slender, shorter, dark brown, the base of third pale. Pronotum gray or pale brownish, sprinkled and spotted with darker brown, clothed with hoary pubescence (or sometimes with the hairs ocherous), having the wavy posterior submargin marked with a black line, the center of which is triangularly emarginate and connected with a longitudinal impressed line, the margin depressed and whitish; column whitish or pale yellow, marked each side with light brown; humeral angles a little prominent; sternum and middle of venter whitish almost to the tip, the pleural pieces and sides of venter fuscous, or paler brown, the latter and sometimes the two or three last segments mottled with brown. Legs and coxæ pale yellow, long and slender; the femora spotted with brown in uneven series, particularly near the tip; the fore and middle tibiæ thrice banded, and the posterior tibiæ mottled with brown; tarsi more or less brownish, with the tip darker, including the nails. Hemelytra lichenated, on a pale ground, with gray, fuscous, or greenish; the costal margin, nervures, and apical margin with brown interrupted lines; clothed with almost prostrate grayish or yellowish pubescence; membrane fuscous or brown, marbled with pale yellowish or white, the veins ferruginous. Tergum pale brown, more or less clouded with dark brown.

Length to tip of venter 5-6 millimeters. Width of base of pronotum 2 millimeters.

This is an exceedingly neat species of *Phytocoris*, of which I found specimens on small plants in Beaver Brook Gulch, next to Clear Creek Cañon, on August 6. It is quite common in Eastern Massachusetts, in Lower Canada, in Rhode Island, New Jersey, Texas, and Maryland. In the vicinity of Baltimore, I have swept it from umbelliferous plants in damp situations, and on dates ranging from June 26 to September 19. When at rest, it looks so much like some of the species of the Neuropterous genus *Psocus* that on one or two occasions I had nearly passed it by, mistaking it for that insect.

The less mature examples are of a paler, more ferruginous brown, marked with pale yellow and darker brown; and varieties occur in the South which have lead-colored or bluish markings near the tip of the corium.

LOPIDEA Uhler.

L. media.

Capsus medius Say, Heteropt. New Harmony, 22, No. 11.

Plentiful at Denver, Golden, Colorado Springs, and in the valley of the Arkansas near Cañon City, August 5 to 18. It occurred most fre-

quently upon the wild-rose bushes. Still, I did not find it upon the rose bushes in Clear Creek Cañon, although I swept them with much assiduity, and obtained various other insects therefrom.

HADRONEMA Uhler.

H. militaris.

Hadronema militaris Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 412.

One specimen from Clear Creek Cañon, well up on the mountain-side, August 6.

Dr. Packard collected one specimen on July 2 at Blackhawk, Colo. It seems to be a mountain-loving species, and did not occur to me on any of the lower levels on which I used the net.

LYGUS Hahn.

1. *L. lineolaris.*

Capsus lineolaris Palisot-Beauv., Ins. Afr. et Amér., 187, pl. xi, fig. 7.

Almost as common in the cultivated districts of Colorado as it is in the Eastern United States. Dr. Packard found it at Golden, July 3; at Blackhawk, July 2; in the American Fork Cañon, Utah, July 22; and very common in gardens at Salt Lake City, July 25. I found it myself, in August, around Denver, near Golden, in the vicinity of Colorado Springs, and near Cañon City.

2. *L. annexus.*

Lygus annexus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 413.

It occurred in small numbers in the mountains and cañons wherever I went. In Beaver Brook Gulch, it offered several very distinctly marked varieties, which I did not find elsewhere. Generally, the ground-color was pale olive or yellowish, marked with black or fuscous. Pale varieties were quite common near Denver on a species of *Euphorbia* with white-margined leaves.

Dr. Packard obtained it at Denver, July 28, and at Idaho, Colo., July 6.

CALOCORIS Fieber.

C. rapidus.

Capsus rapidus Say, Heteropt. New Harmony, 20, No. 4.

Capsus multicolor H. Schf., Wanz. Ins., viii, 19, fig. 795.

One specimen from near Pueblo, Colo., August 10. Dr. Packard collected it in the American Fork Cañon, Utah, July 22.

RESTHENIA Amyot ET Serv.

R. confraterna.

Resthenia confraterna Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 411.

One specimen from Beaver Brook, August 6, and another collected by Dr. Packard at Idaho, Colo., July 6.

LABOPIDEA, new genus.

Ovate, hairy, with the head broader than the pronotum, and the outer margins of the hemelytra strongly curved. Head transverse, triangular,

with the eyes subglobose and almost pedunculate; the face prominently convex, almost vertical in front, curving inferiorly; the tylus prominent; superior cheeks almost vertical, broad triangular, with the apex placed inferiorly; lower cheeks placed in large part behind the upper ones, thickened, blunt at the lower end; bucculæ slenderly lunate, concave inside, as long as the throat; rostrum short and stout, inserted on a line running direct from the base of the antennæ; occiput with a carinate collar, which is convexly elevated on the middle, and with an incised line bounding it in front; antennæ stout, about as long as the pronotum and body united, the basal joint about as long as the head, a little thickened beyond the base, second joint very long, less stout than the basal one, cylindrical, the two apical joints a little more slender. Pronotum transverse, the sides oblique, narrowing anteriorly, the anterior angles rounded, anterior margin moderately concave, with the callosities broad, bilunate, each lobe convex behind, and with the space uniting them concave behind. Femora broad, compressed; hind tibiæ very long. Scutellum triangular, the three sides almost equal, and the surface very feebly convex. Hemelytra short and wide, with the costal margin broadly accuated posteriorly, with the cuneus very large and broad, and the membrane short and attached to the inner side at the end of the corium.

L. chloriza, new sp.

Pale, clear-green, densely pubescent. Head yellowish; face with a blackish circle in front, which is interrupted above; each side of vertex with a dark-brown dot, and the base of tylus, the suture at the tip of lower cheeks, and the eyes dark piceous. Antennæ pale piceous, paler on the basal joint. Rostrum reaching to the intermediate coxæ, tinged with piceous at the ends of the joints and on the apex; the basal joint a little longer than the throat, the second a little longer. Pronotum narrower in front than behind, trapezoidal, the sides oblique, the posterior margin straight and the anterior one a little concave; surface green, somewhat yellow anteriorly, with a dark dot each side of posterior division, and a brown curved line bounding each lobe of the callosity posteriorly. Under side whitish-green, or very pale yellow, with a black spot at the base of the anterior coxæ, and one above; also a faint duskiess at base of the other coxæ. Legs bright yellow, or a little greenish, the tarsi somewhat infuscated at tip, and the nails piceous. Scutellum faintly tinged with yellow, closely coated with whitish hair. Corium green, unevenly punctate, the punctures shallow, and sometimes confluent, those of the claws coarser; the surface polished, but closely invested with pale, almost erect pubescence; membrane white, with a faint cloud of fuliginous outwardly. Tergum black on the disk, the broad connexivum and the apex orange, the disk smooth, and all the remaining surface invested with remote prostrate hairs, venter polished, remotely pubescent, yellowish, but a little obscured at base.

Length to end of abdomen $4\frac{1}{2}$ –5 millimeters. Width of pronotum $1\frac{3}{4}$ millimeters. Width across hemelytra $2\frac{1}{4}$ millimeters.

Collected in the American Fork Cañon, Utah, by Dr. Packard, on July 22.

This is a robust and hairy species, built much after the pattern of the genus *Labops*, but with less prominent and not fully pedunculate eyes. Doubtless many other equally interesting Phytocorids yet remain to be discovered in the cañons, parks, and on the foot-hills of the Rocky Mountain regions. They should be looked for as the different kinds of flowers begin to bloom. In the valley of the Arkansas, the grape grows luxuriantly, and when that is in bloom several species may be obtained from it, as in Texas and in the Atlantic region.

LABOPS Burm.

L. hesperius.

Labops hesperius Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 416.

One specimen from the mountain-side near Gray's Peak, August 6. I swept it from some bushes growing among the rocks, but the most assiduous labor failed to secure other specimens.

MACROCOLEUS Fieber.

M. coagulatus, new sp.

Apple-green; the color in the pronotum and hemelytra appearing as if coagulated, leaving the ground, in patches, bare and pale; the form normal, moderately robust. Head transverse, pale green, clothed with whitish pubescence and minute scales; the base with a stout, transverse carina, a little indented in the middle (σ), less elevated (ρ), with an impressed line bounding it in front; tylus quite prominent; the face a little more contracted in the male than in the female. Antennæ yellowish, moderately slender, the length a little more than that of the head; pronotum and claws united, the basal joint stouter than the second, second of uniform thickness throughout and a little more than three times the length of the basal joint; third a little shorter than the second, and slightly more slender; fourth almost as thick as the third, and but little longer than the basal joint. Rostrum reaching upon the intermediate coxæ, slenderly tapering and very acute, green at base, yellow beyond, and blackish-piceous at tip. Eyes brown, oval, inclining to reniform, prominent, placed a little obliquely. Pronotum transverse, moderately flat, green in patches, the anterior half yellowish, clothed with white pubescence and scales; angles large, separated in the middle by a depression; anterior margin short; the posterior margin long, with very angular shoulders; the lateral margin very oblique, with the edge carinate, the deflexed side depressed in, and, like the other pleural pieces, smooth, pale, and bald. Legs pale, yellowish-green, the tips of tibiæ and the tarsi obscured, the tip of the last joint and the nails piceous. Scutellum pale green, smooth, feebly convex. Hemelytra green in coagulated patches on a pale ground; the corium and

clavus with a few scattered blackish punctures, closely whitish pubescent; membrane hyaline, with a large faint cloud near the apex, an obscure smoky spot on the loop of the nervure, and a darker spot exterior to the end of the areole; sometimes with the latter only, or with most of the membrane smoky; the nervure green. Wings clear hyaline. Abdomen pale green, more or less tinged with yellow, polished, remotely pubescent.

Length to tip of abdomen 3 millimeters. Width of pronotum $1\frac{1}{4}$ millimeters.

Beaten from the wild gooseberry and other bushes in Clear Creek Cañon, August 7.

The wing-covers are much longer than the body, the corium long and acutely angular, and the membrane is long and full. The male has a broad genital lobe on the left side, which is a little convexly arched, slightly angular on the upper end and bristly; next to this is a cup-shaped organ, and beneath this a longer, cushion-shaped piece. Perhaps, when these organs are unrolled, they may show teeth or processes on their inner edges.

TINICEPHALUS Fieber.

T. simplex.

Tinicephalus simplex Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 417.

A neat little green insect, which occurs on various kinds of plants in the vicinity of the mountains west of Denver in July and August.

It is one of the several forms belonging to the Rocky Mountain region, which, while generically different, so closely resemble each other as to make it difficult to discriminate the species. My materials are at present too incomplete and imperfect to enable me to designate them all; but, upon the receipt of clean specimens of both sexes, it will be comparatively easy to give their true characteristics.

STHENAROPS, new genus.

Outline similar to that of *Calocoris bimaculatus* Hoffg., elongate, almost parallel-sided, with the pronotum short campanulate as seen from above. Head wider than the front of pronotum, incisedly constricted at base, the front almost vertical, and excepting the tylus and cheeks, nearly square, with the center like convex shield, the back part of vertex flattened, and bounded behind by an arched, stout, carina; eyes large, globosely oval, each placed on a prominent base, a little oblique; face indented at base of tylus, convex, contracting inferiorly; the tylus very prominent, curving downward and backward, the superior cheeks broad, nearly vertical, triangularly rounded at tip, the inferior cheeks longer, prominently elevated like a ridge, subfusiform. Rostrum short and stout, the basal joint broad and compressed, geniculate, a little longer than the head; throat concave. Antennæ long and slender; the basal joint longer than the head, feebly curved, cylindrical; second very long, of uniform thickness throughout; third thinner and a little shorter;

fourth a little more slender, as short or shorter than the basal joint. Pronotum a little wider than long, broadly a little convex, the sides rounded off, the lateral margins concave; posterior margin arcuated, the anterior margin concave; callosities large, convex, transverse, bounded behind by an impressed line, separated in the middle by a transverse indentation. Legs stout, the thighs compressed, posterior tibiæ very long; basal joint of tarsi shorter than the second. Scutellum almost equilateral, the surface even, very feebly convex. Hemelytra flat, the costal margin strongly carinate, almost straight.

1. *S. chloris*, new sp.

Pale green, or greenish-white, elongate, pubescent. Head long, five-angled, almost vertical, pale green, polished, clothed with sparse, long, whitish pubescence; center of the vertex posteriorly with a short black line, indented in front, which connects with a subquadrangular black ring bounding the inflation of the cranium; face black, highly polished, the superior cheeks green; space beneath, before, and above the eyes also green; throat and base black. Eyes brown. Bucculae margined with green. Rostrum testaceous, reaching to the back of the posterior coxæ, the third and fourth joint piceous. Antennæ as long as the hemelytra including the membrane, black or piceous, with the two last joints dusky; basal joint a little shorter than the width between the eyes; second joint as long as from the front of cranium to the base of the pronotum; the third a little shorter; fourth shortest. Pronotum transverse, green, yellow anteriorly, clothed with erect, long, whitish pubescence, the middle longitudinal line a little depressed, and sometimes having a few black points anteriorly; each side of middle with a round black dot; anterior angles obliquely rounded, the posterior ones prominent, with the margin behind them arcuated. Scutellum bright green, sparsely clothed with white hairs, the basal middle with a black spearhead-mark. Sternum black; the deflected propleura green, polished; the other pleural segments blackish, margined with white. Coxæ more or less dusky, but green at tip; legs green, the tibiæ at the tip and the tarsi piceous, the nails black. Corium and clavus apple-green, sometimes a little sprinkled with black, obsolete rugulose, moderately clothed with white, long, oblique, pubescence; membrane smoky, paler at base, the nervures greenish; wings smoky. Venter black, broadly greenish-white each side of disk, neatly clothed with silky white pubescence, the segments more or less margined with white.

Length to tip of venter 3-3 $\frac{1}{4}$ millimeters. Width of pronotum 1 $\frac{1}{2}$ millimeters. Length of hemelytron 3 $\frac{3}{4}$ millimeters.

An elegant little Capsid, of which I found a few setting singly upon the flowers of a slender pale Composite, growing in Manitou Park, August 14. Another specimen was swept from some weed in the vicinity of Colorado Springs, in the low grounds near the Fountain Creek.

2. *S. malina*, new sp.

Larger and more slender than the preceding species, with longer an-

tennæ; deep green, highly polished, very sparingly pubescent. Head curved posteriorly, with the neck more defined than in the preceding species, greenish-yellow, indented on the vertex, the transverse carina a little arched, with the surface in front of it a little depressed; middle of cranium with a roundish, large, black shield, which connects with the black color of the face; the whole face, under side, and base of the head polished black; tylus abruptly elevated, prominent, a little scooped out each side, not impressed at base, pubescent at tip; eyes brown, prominent. Rostrum reaching upon the intermediate coxæ, greenish; the last joint piceous; the basal joint very broad, rounded at tip; bucculæ pale. Antennæ as long as the entire hemelytra; pronotum and vertex conjoined, black, excepting the basal joint, which is green excepting the black tip and under side next the tip; the basal joint longer than the width between the eyes; second very long; third a little shorter, dusky; fourth scarcely shorter than the first, also dusky. Pronotum campanulate, longer than wide, obsoletely rugose, yellow anteriorly, clothed with white, remote, pubescence, with a large, round, black spot each side, the surface distinctly sloping toward the sinuated sides; posterior margin feebly convex, the lateral angles subacutely prominent, with the margin behind them almost sinuated. Scutellum green, feebly convex, with a slightly depressed black spot near the middle at base, from which a blunt faint carina runs backward to the tip. Propleura with a large black spot reaching to the base of the coxæ; sternum dull blackish, and sometimes also the greater part of the meso- and meta-pleuræ. Coxæ green, a little dusky at base; legs green, or greenish-yellow, the tips of tibiæ and tarsi and the nails piceous. Hemelytra clear, deep green, remotely whitish-pubescent, remotely punctate, with a blackish streak on the disk of the corium; costal margin thick and prominent; membrane black or blackish, with the basal margin and the nervures pale greenish; wings blackish. Tergum black, shining; venter blackish, or with the outer margins pale, the whole surface minutely sericeous pubescent. Genital segment of the male pale piceous or yellow, the right side with a long triangular lamina extending obliquely toward the left and terminating in a long slender hook, which curves far backward.

Length to tip of venter 4-5 millimeters; to tip of membrane 5-7 millimeters. Width of base of pronotum $1\frac{1}{2}$ -2 millimeters.

Inhabits Eastern Massachusetts, New York, Pennsylvania, Maryland, in places with long grass, in June; Ohio, Southern Illinois, and Texas. Fragments of a male, a little stouter than usual, were brought from the borders of Russian America, in the far northern part of the British possessions. Missouri, C. V. Riley.

ORTHOPS Fieber.

O. scutellatus, new sp.

Form of *O. pellucidus* Fieber. Greenish-yellow when fresh. Head yellow, smooth, highly polished, impunctate; tylus black and connecting with a long black spot, which runs back to near the base of vertex;

basal carina pale, nearly straight, narrower in the middle, and in front of this point is a faintly impressed longitudinal line; eyes dark brown, the throat and the suture between the cheeks blackish. Bucculæ black, the rostrum reaching to the posterior coxæ, greenish-yellow, with a small piceous tip. Antennæ moderately thick, yellow, tinged with piceous, the two apical joints darker, the base of third pale; second joint largest, about as long as the pronotum, the third a little longer than the basal one, and more slender than the second; fourth shortest. Pronotum with a regular curving slope toward the sides and front, smooth, polished, coarsely punctate, with a small black are behind each callosity, a brownish cloud across the base, and a longitudinal, black, short stripe on the deflexed, punctate sides; surface a very little pubescent; posterior margin arcuated, the edge sharp, and faintly recurved; sternum blackish, the meso- and meta-pleuræ dull black, margined with yellow. Coxæ and legs greenish yellow, the knees and tips of tibiæ tinged with brown, and the apex of the tarsi with the nails piceous. Scutellum pale yellow, black at base, indistinctly and very minutely punctate, transversely rugulose, minutely pubescent. Corium dull yellow or yellowish-green, with a large brown cloud at tip and the whole clavus brownish, distinctly and closely finely punctate, minutely pubescent, the costal margin brighter yellow; cuneus dull yellow, margined behind with brown; membrane with a cloud at tip, the nervures and a tinge at base brown. Venter bright yellow, highly polished, impunctate, minutely pubescent, with a streak of brown each side, extending from the base, but not reaching to the tip.

Length to tip of venter $3\frac{1}{2}$ –4 millimeters. Width of pronotum $1\frac{1}{2}$ millimeters.

Beaten by myself from bushes in Clear Creek Cañon, August 7. It occurred singly, but was not at all rare. My short stay in that locality prevented me from collecting them in large numbers.

MEGACCELUM Fieber.

1. *M. fasciatum*, new sp.

Long-oval, yellow, stout, minutely and closely pubescent. Head broad and stout, five-angled, blunt, vertical, brownish-yellow, impunctate, broadly, obsoletely channeled transversely in front of the slender basal carina; vertex convex; tylus moderately prominent, curving inferiorly; face paler or orange, sometimes tinged with rufous; throat and bucculæ rufous. Rostrum reaching to the posterior coxæ; basal joint red, a little longer than the throat; remaining joints yellow, the second longest. Antennæ stout, reddish-yellow, paler at base; second joint a little longer than the pronotum, becoming slightly thicker toward the tip; third thicker than the preceding, and about one-third shorter; fourth thick, a little longer than the basal one. Pronotum short, minutely rugulose and obsoletely punctate, polished, pale chestnut-brown, more or less tinged with rufous; the lateral margins very oblique,

rounded off, destitute of a carina; the posterior margin a little arcuated, declivously rounded, with the lateral angles prominent, subtubercular, acute. Propleuræ punctate, rugulose, tinged with rufous; meso- and meta-pleuræ impunctate, dull rufous. Coxæ and legs yellow, the tibiæ tinged with rufous. Scutellum chestnut-brown, yellow at tip, finely pubescent, closely, minutely punctate, feebly rugulose. Corium and clavus yellow, with a brown transverse spot at base, omitting the outer margin, and a larger band extending from the middle to the tip obliquely, and omitting the forward part of the costal margin and the basal suture of the cuneus, but covering the cuneus; the surface minutely, evenly, densely rugulose and punctate, and finely whitish pubescent; abdomen rufous or pale brown, finely pale pubescent; membrane dusky, pale at base.

Length to tip of venter 2-2 $\frac{1}{4}$ millimeters; to tip of membrane 2 $\frac{1}{2}$ -3 millimeters. Width of pronotum 1 $\frac{1}{4}$ -1 $\frac{1}{2}$ millimeters.

Two specimens were swept by me from bushes near Manitou, August 13. It occurs also in Texas; Missouri; Illinois, near Rock Island; in York County, Pennsylvania, in June, on hickory. In Maryland, it belongs to the central faunal district, and may be found in July, sometimes abundantly, on the *Carya alba* Mich. It varies very much in the depth and distinctness of the colors, and in the size of the brown bands of the hemelytra. The specimens from Colorado are lighter but more clearly colored than the average of specimens from Maryland. One specimen from Manitou, July 16, collected by Dr. A. S. Packard, jr.

PLAGIOGNATHUS Fieber.

P. obscurus.

Plagiognathus obscurus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 418.

Found in the American Fork Cañon, Utah, by Dr. Packard, on July 22.

Comparison with sufficient series of the European species may show that this is only a form of one of them. It agrees in many respects with *P. bohemani* Fallen, belonging to Switzerland and other parts of Central Europe, but the only specimens of that species in my collection are too much damaged to admit of full comparison.

PÆCILOSCYTUS Fieber.

P. sericeus, new sp.

A little less robust than *P. unifasciatus* Fab., with the sides of the hemelytra straighter. Clay-yellow, more or less tinged with brown or rufous, the upper surface, excepting the head, minutely and closely scabrous, finely punctate, golden sericeous pubescent. Head almost vertical, gently curved in front; eyes large, dark brown, the tylus curving down, prominent, with the incision of the base and sides very deeply cut, black or piceous, highly polished, narrowing inferiorly; the surface yellow, smooth, golden pubescent with a series of oblique wrinkles, colored brown, each side of a central, longitudinal, low ridge; vertex and cheeks

with some small brown streaks. Bucculæ orange-yellow; labrum piceous or black, the rostrum extending to the base of the posterior coxæ, bright yellow, with the tip or one or both of the last joints piceous. Antennæ dusky yellow or pale piceous; the basal joint thickest, piceous or black; the second very long, palest, piceous at base and tip; third more slender, a little darker at tip, more than one-half as long as the second; fourth still more slender, shorter than the third, but longer than the basal one. Pronotum wider than long, moderately convex; the sides obliquely arcuated, not carinated; the outer angles a little humped, and the surface adjoining postero-interiorly a little impressed; the posterior margin a little arcuated, the edge sharp, but faintly decurved; callosities bounded behind each by a brown, impressed arc, and with a brown indented point in the center of each; the submarginal surface frequently with a brown broad streak, or with a cloud and a darker streak in the anterior angle; deflexed sides pale yellow, scabrous and sericeous pubescent, generally with one or two brown spots (but sometimes without them); sternum and pleuræ more or less dusky, pubescent. Legs and coxæ yellow; the femora a little darker, crossed with two or three brown oblique bands, those of the posterior femora darker and jagged; sometimes with the knees a little brown; tips of tibiæ, two last joints of the tarsi, and the nails piceous. Scutellum with the posterior part of the disk a little raised, sinuated each side, brighter yellow, transversely wrinkled, the base brown in the middle and on each side. Corium pale dull yellow, clearer on the costal area, golden sericeous pubescent; the clavus, except at base and a long cloud on the disk extending to the apex, brownish; cuneus red, excepting on its margins, which are pale yellow; membrane pale smoky, margined at base and inward by a thickened fuscous edge, the inner continuation of this edge yellow, base pale, the nervules pale yellow, with the smaller areole sometimes dark brown. Venter yellow or reddish-yellow, polished, minutely pubescent, the disk with a large black area, and the outer submargin with a series of short black lines running from the base to the penultimate segment; the exterior margins of the posterior segments are oblique, and give the angles prominence, making the segments appear serrate.

Length to tip of venter 3-5 millimeters; to tip of membrane 5-6 millimeters. Width of pronotum 2-2½ millimeters.

Collected by me at Colorado Springs, while sweeping the weeds near the Fountain Creek, August 16.

It is a very variable and common insect in many parts of North America, extending from Quebec to Southern Florida, thence west into Texas and New Mexico. In Maryland, it may be met with from the first of June till the end of October, and it lives upon violets, weeds, and herbs in low grounds. I have found it in York County, also, in similar situations, and upon *Ambrosia*.

Specimens of both sexes occur with a few coarse and deep punctures on the base of the head in front of the occipital carina, and very often

the black lines of the venter are replaced by a broad continuous dark stripe, running the whole distance from the base to the tip. A marked feature in the structure of the female is the large size of the last ventral segment, which is broadly and deeply emarginated to admit the ovipositor. Each lobe of this is triangular, with the apex truncated, and on the tergal aspect the sides are very high, giving the segment the appearance of being hollowed out.

Specimens from the mountains of Georgia and North Carolina are sometimes very pale, with only a trace of rose-color in the cuneus, and with but faint indications of the brown markings of the upper and lower surfaces and bands of the thighs.

PAMEROCORIS, new genus.

Contour of the longer forms of *Anthocoris*, but with the pronotum and head closely imitating *Ozophora* and *Ligyrocoris* of the family *Lygæidæ*. Head horizontal, long-conical, constricted behind the eyes, compressed and tapering before the eyes; the eyes large, suborbicular, prominent, almost as wide as the vertical thickness of the head; the vertex convex between them, the carina connecting the base of the eyes obsolete; tylus oblique, a little arcuated, prominent, occupying the whole width of the tip of the head; superior cheeks flat, ligulate, running parallel to the tylus behind it, and almost reaching to its tip; the inferior cheeks very small, sunken, placed obliquely behind the end of the superior ones. Antennæ longer than the body with the hemelytra; the two first joints stout, the basal one a little longer than from the eye to the tip of the tylus, tapering at base; the second cylindrical, a very little shorter than the corium and cuneus together; third and fourth much more slender, filiform, each longer than the basal, the fourth a little longer than the third. Rostrum long and very slender, reaching to behind the posterior coxæ; basal joint a little longer than throat, a little stouter than the second; second joint longer than the basal; third still longer; fourth a little longer than the basal one. Pronotum campanulate, wide at base, narrow anteriorly, contracted in front, and with a narrow collum on the anterior margin; lateral margins sinuately carinate; anterior lobe convex, the callosities separated by a short, longitudinal groove; posterior lobe slanting toward the transverse impressed line; the posterior margin is concavely sinuated, and the postero-lateral angles produced, long and narrow. Prosternum a little depressed, the sides carinately elevated, converging to an acute angle between the anterior coxæ. Scutellum longer than wide, acute at tip, at base transversely elevated, and behind this there is a transverse impressed line. The sides are deeply sinuated and the edge slenderly carinate. Coxæ long, stout, compressed, the anterior ones longest and stoutest; femora compressed, slenderly channeled on the inner and outer faces, posterior pair longest; the tibiæ very slender; tarsi long, the basal joint longest, the intermediate one very short, the apical one shorter than the

basal. Hemelytra flat, scarcely wider posteriorly, the costal margin carinately raised, a little arcuated; cuneus long-triangular, very slender at tip; membrane long. Abdomen narrow.

P. anthocoroides, new sp.

Piceous-black elongate-elliptical. Head smooth, dull, impunctate; the eyes dark brown, margined at base with paler; the facets very large; cheeks and tip of tylus rust-red; antennæ yellow, more or less infuscated, the basal joint black or piceous, with a pale tip, the two apical joints dusky. Rostrum pale yellowish, more or less piceous at tip. Pronotum dull black, sparsely pubescent, a little polished on the elevated disk of the anterior lobe; the lateral margins very oblique, and with the marginal line wavy; the posterior side almost twice as wide as the anterior one: the posterior lobe a little scabrous, obliquely depressed, the humeral angles distinctly produced, somewhat ligulate, and rounded at tip; the deflexed sides wrinkled. Coxæ pale yellow; the femora piceous or rufous, with the apex yellow; tibiæ and tarsi pale yellow, sometimes a little infuscated. Scutellum piceous or rufo-piceous, with a bright orange spot each side of the disk, and the acute tip pale yellow. Hemelytra yellowish-white, minutely scabrous, and sparingly, finely pubescent, infuscated at base, and with a large fuscous cloud extending from the middle to the tip; cuneus fuscous, with a roundish yellow spot at base; membrane smoke-brown or pale brown. Postpectus and venter dull rufous, the latter piceous on the middle; the genital pieces more or less orange. The hemelytra are sometimes fuscous, with a pale disk to the clavus, and a large pale spot on the middle of the corium.

Length to tip of membrane 3-3½ millimeters. Width of base of pronotum 1 millimeter or a little less.

A fragment of a specimen was in the little lot kindly given to me by Mr. B. H. Smith, collected in the vicinity of Denver, Colo. From Grimsby, Canada, a specimen was sent to me by Mr. J. Petit, and I have a specimen, collected by myself, from a strip of woods near Baltimore, on July 8. Another specimen (♂) is in the collection of the late Dr. T. W. Harris, which was collected by him in Eastern Massachusetts on the 20th July, 1831. This is the most interesting Heteropter which has yet been found in North America. While being an undoubted Phytocorid in its details of higher group value, it yet presents the features and some of the characters of both the *Lygaeidæ* and *Anthocoridae*. As far as I have yet been able to examine the structure of the *Phytocordie* in their various stages of development, they have strongly impressed me as the great central group of the order, in which the characteristics of all the other groups may be found, with some other features which they hold entirely peculiar to themselves.

IDOLOCORIS Doug. and Scott.

I. agilis, new sp.

Form of *I. pallidus* Fieber; black, highly polished, impunctate, but very minutely rugulose on the upper surface. Head normal, deep black,

shining; the tylus a little prominent. Rostrum reaching upon the posterior coxæ, pale yellow, a little dusky at tip; the basal joint broad, compressed, longer than the head; second a little longer; third a little the longest. Antennæ long and slender, black; the apical joint yellow, with the base blackish; basal joint highly polished, thickest a little longer than the head; second cylindrical, almost as long as the head and pronotum united; third a little more slender, filiform, of about the same length as the preceding; the fourth of the same thickness as the third, a little longer than the basal one. Pronotum short campanulate polished, black, with a quadrate yellow spot on the middle, which sends forward a linear branch as far as to the margin; the collum constricted, whitish; callosities transversely oval, convexly elevated, with the line between them impressed; posterior lobe usually separated from the anterior one by a transverse impressed line, sometimes with an obsolete, impressed, longitudinal line on the middle; posterior margin concave, a little wider than the length of the pronotum; the humeral angles produced into slightly depressed lobes. Pleuræ black; the posterior ones more or less margined with yellow. Coxæ and legs yellow; the tip of tarsi and the nails pale piceous. Scutellum black, with a yellow spot each side of base. Hemelytra dusky hyaline, tinged with yellow, minutely, remotely, obsoletely punctate; tip of the clavus, inner margin, and posterior margin as far as a brown spot on the costa behind the base of cuneus rufous or pale brown; cuneus hairy, margined inwardly with ocherous, and with a yellowish-brown tip. Venter yellow, black at tip, minutely sericeous pubescent; tergum blackish, yellowish on the disk.

Length to tip of venter $3\frac{1}{2}$ –4 millimeters; to tip of hemelytra $4\frac{1}{2}$ –5 millimeters. Width of base of pronotum 1 millimeter or less.

A beautiful, graceful form, of which I swept several specimens from plants in Beaver Brook Gulch, August 7.

ORECTODERUS Uhler.

O. amœnus, new sp.

More slender than *O. obliquus*. Orange-fulvous, polished, not distinctly punctate; the hemelytra dull, excepting the long, cuneiform silvery streak running from the base of the corium. Head longer than wide, polished, narrowed behind the eyes, the width between the eyes scarcely less than the expanse of the collum; face moderately decurving; eyes reniform, oblique, blackish, very prominent. Antennæ moderately stout, rod-like, the basal joint constricted at its origin, the second joint very long, infuscated, of even thickness throughout. Rostrum reaching upon the venter, slender, infuscated. Pronotum subcampanulate, longer than wide, very narrow in front, finely polished, the posterior margin concave. Legs long and slender, the tibiæ and tarsi tinged with piceous. Venter highly polished, orange, a little infuscated, a little clavate posteriorly. Marginal lines of the corium all around and of

the clavus brownish; cuneus infuscated at tip, with a large white spot at base; the membrane smoky brown, paler at the basal angle.

Length to tip of venter $4\frac{1}{2}$ millimeters; to tip of hemelytra 6 millimeters. Width of pronotum $1\frac{1}{8}$ millimeters.

A damaged specimen was in the lot kindly given to me by B. H. Smith, collected in the vicinity of Denver, Colorado. Other specimens have been secured in New Mexico, Texas, and Illinois.

Family ANTHOCORIDÆ.

ANTHOCORIS Fallen.

A. musculus.

Reduvius musculus Say, Heteropt. New Harmony, 32, No. 6.

A few specimens were flying about in Beaver Brook Gulch, of which I secured a pair; and I swept a few others from plants growing on the steep side of the mountain in the midst of the pine woods. One specimen occurred on a vine of Clematis, which festooned a rock on the steep declivity of the upper part of this gulch, on August 6.

TRIPHLEPS Fieber.

T. insidiosus.

Reduvius insidiosus Say, Heteropt. New Harmony, 32, No. 5.

Anthocoris pseudo-chinche Fitch, Second Report New York, 295.

A few specimens occurred to me in the suburbs of Denver, August 5. No doubt, it has been introduced into the West with the raspberries, blackberries, and other small fruit. In Maryland, it is found upon the Ox-eye, Daisy, and on some other wild flowers, and in gardens sometimes abounds upon the small fruits, sucking their juices and giving the berries a nauseous taste.

Family ACANTHIADÆ.

ACANTHIA Am. et Serv.

A. lectularia.

Cimex lectularius Linn., Fauna Suec., 909.—De Geer, Mém., iii. tab. 17, figs. 9-15

Acanthia lectularia Amyot et Serv., Hemipt., 311, No. 1.

One specimen, collected by Dr. Packard in Salt Lake City, July 27. He reports them to be very abundant. I did not meet with specimens in any of the places where I stopped in Colorado.

Family ARADIDÆ.

ARADUS Fab.

1. *A. tuberculifer.*

Aradus tuberculifer Kirby, Fauna Bor.-Amer., iv, 278, pl. 6, fig. 5.

Collected by Dr. Packard near Idaho, Colo., July 6; one specimen found by myself on the mountain-side, far up the Beaver Brook Gulch, August 6.

2. *A. rectus*.

Arañus rectus Say, Heteropt. New Harmony, 29, No. 4.

One specimen from the mountains near Beaver Brook Gulch, August 6.

The most diligent search beneath loose bark and in the crevices of the bark of the pines and other trees, at lower levels, failed to detect other specimens. These two species evidently belong more particularly to the high mountains, and to the northern regions where the air is of corresponding rareness.

Family PHYMATIDÆ.

PHYMATA Lat.

P. erosa.

Cimex erosus Linn., Syst. Nat., ed. 12, ii, 718, No. 19.

Phymata erosa Amyot et Serv., Hemipt., 290, No. 2.

This species is now widely distributed over Western as well as Eastern North America. I did not meet with it in the mountains, but it was sufficiently common around the foot-hills and on the plains wherever man had settled and cultivated the ground. It was generally found prowling about upon the stems and flowers of the Euphorbias and Sun-flowers, trying to catch the bees and other insects which alighted there.

Family NABIDÆ.

CORISCUS Schrank.

C. ferus.

Cimex ferus Linn., Fauna Suec., 256, No. 962.

Nabis ferus Fieber, Europ. Hemipt., 161, No. 9.

Widely distributed in Colorado, as well in the mountains as on the plains and foot-hills; chiefly, however, in spots where the agency of man is to be seen. Foreign weeds have been introduced, and various plants have been encouraged by the wider distribution of seeds near the streams of water and on the routes of travel, and on these this species finds its home and food. In damp situations in Beaver Brook Gulch, in Clear Creek Cañon, everywhere in Denver City and around it at the lower levels, in the region of Colorado Springs and Manitou, near Cañon City, and in the valley of the Arkansas, it is quite common in August.

Dr. Packard collected it on June 27 at Denver, and at Salt Lake City in July. Slight differences in the amount of black and pattern of marking of the head and pronotum occur in the specimens from Colorado, just as in those from England and the continent of Europe. There is also some variation in the size and proportion of the various parts of the body, particularly in the width of the abdomen.

Superfamily REDUVIOIDEA.

Family REDUVIIDÆ.

Subfamily REDUVIINÆ.

SINEA Amyot et Serv.

S. diadema.

Reduvius diadema Fab., Genera Ins., 302; Ent. Syst., iv, 206, No. 46.

Reduvius raptatorius Say, American Entomology, ii, pl. 31.

Sinea diadema Stål, Enum. Hemipt., ii, 70, No. 1.

Swept from weeds in the suburbs of Denver, August 8. It did not occur in numbers, as in Maryland and other States. Roving about from place to place in fields and near woods, it ascends the Golden-rod and other plants, and seizes such insects as come within its reach.

DIPLODUS Stål.

D. luridus.

Diplodus luridus Stål, Stettin. Ent. Zeit., xxiii, 452.

Collected by Dr. Packard, July 13-16, at Manitou and in the Garden of the Gods. One specimen was found by myself near Colorado Springs, August 10.

Subfamily APIOMERINÆ.

APIOMERUS Hahn.

1. *A. flaviventris.*

Apiomerus flaviventris H.-Schf., Wanz. Ins., viii, 77, fig. 847.—Stål, Enumeratio Hemipt., ii, 98, No. 16.

Dr. Packard secured specimens of the brown variety on the foot-hills, at the mouth of Clear Creek Cañon, on July 3, and in the Garden of the Gods and at Manitou, July 13-15.

A larva of this species was swept by me from some bush in Clear Creek Cañon, near the mouth of Beaver Brook Gulch, August 7.

2. *A. spissipes.*

Reduvius spissipes Say, Journ. Acad. Phila., i, 199, No. 20.

Apiomerus spissipes Stål, Enum. Hemipt., ii, 98, No. 15.

One specimen from the valley of the Arkansas, near Cañon City, August 11.

Family SALDÆ.

Form oval or long-ovate. Head vertical, from above 5-angled, between the eyes broader than long; ocelli 2; the tylus prominent, cylindrical; superior cheeks short, obtuse; the bucculæ long, broad, rounded plates, partly covering the base of the rostrum. First joint of antennæ short, cylindrical; second the longest, cylindrical; the third and fourth generally a little fusiform, and more or less thickened. Eyes projecting prominently outward and backward. Pronotum trapezoidal, with the anterior side much the shortest, the posterior side the longest, and the

lateral margins oblique, with the edges recurved and the submargin depressed; the latero-posterior angles overlapping the base of the scutellum. Xyphus of the prosternum short, triangular; the prosternum short, projecting backward, like a lid, over the base of the anterior coxæ; the propleura with a roundish pit beyond the anterior angle of the prosternum. Mesosternum grooved, with the coxæ placed moderately close together. Metasternum deep-seated, the coxæ in contact at the base. Scutellum triangular, with the sides almost equal. Membrane with looped nervules, forming a transverse series of long areoles. Last ventral segment scale-like in the female, moderately short, rounded behind. Posterior coxæ very broad, free, formed for leaping; the posterior trochanters very long, acute, placed on the inner side of the base of femora; the posterior femora and tibiæ much longer than the others.

The posterior legs are thrown very far back by reason of the very large and long coxæ, and, together with the long femora and tibiæ, give them a great facility in vaulting into the air. They use their wings in connection with this motion, and generally alight several feet from the point of departure. Their motion in running over the ground is often sinuous, while rapid, and their selective adherence to the spots which best agree with their combination of colors may well shield them from the pursuit of enemies. Only one genus has thus far been reported from North America; but groups of characters may readily be found sufficient to divide it into several genera.

SALDA Fab. (auctor.)

Oval, ovate, or elliptical. Head vertical, or nearly so, contracted behind the eyes, the eyes reniform and very projecting outward; tylus thick, prominent, cylindrical; the upper cheeks short, obtuse, and the lower cheeks long, wide, and partly embracing the base of the rostrum. Ocelli large, central, placed near together. Rostrum reaching to or behind the intermediate coxæ; the first joint very short, the second very long. Antennæ long; basal joint shortest, more or less thickened toward the tip; second very long, thickened at tip; third and fourth subequal, longer than the basal one. Pronotum trapeziform, the sides oblique; callosities large, transverse, convex, strongly bounded by impressions on the sides and behind; anterior part, next the head, more or less constricted; the lateral submargin depressed; posterior margin concave, with the humeral angles more or less produced. Hemelytræ oval, the costal margin arcuated, the edge carinate, and the costal area foliated, particularly at base. Legs all of the same form, the posterior ones longest; tarsi, first joint very short, second longer than, or subequal to, the third; the claws slender, very long, curved. Prosternum quadrately cut out to fit over the coxæ, the xyphus triangular; mesosternum narrow, grooved; metasternum hidden by the coxæ, deep-seated, in the middle convexly elevated; connexivum of the tergum forming a broad, flat rim, sharply separated from the disk. Genital segment of the male much longer than that of the female.

A. *Membrane with five long areoles :*1. *S. signoretii*.

Salda signoretii Guerin, La Sagra's Hist. Nat. de l'île de Cuba, Hemipt., 401, pl 13, fig. 10.

Acanthia signoretii Stål, Enum. Hemipt., iii, 148, No. 1.

Oval, sand-yellow with black markings, or black with sand-yellow markings, all over minutely sericeous pubescent. Head more or less marked with black between the eyes and behind, omitting the amber ocelli and two spots on the vertex, or with only two small black spots on the vertex; gula with a broad black spot; the emarginated inner side of the eyes generally black. Antennæ yellow or pale piceous, the basal joint black beneath and at base; second joint blackish or dusky beneath; third and fourth sometimes blackish beneath, the latter almost as short as the basal one, the third longer. Rostrum reaching to behind the middle coxæ, piceous or black, with the basal joint pale. Face with a longitudinal groove, and the cranium with a few wrinkles and ridges. Pronotum wide, deeply concave behind, with the humeral angles drawn out obliquely into broad, flat lobes, with a little hump at the outer corner; surface finely pubescent, closely, finely, obsolete punctate; with a dull black spot on the disk of the anterior lobe, which sometimes runs back narrower to the base, and on each humeral angle a black spot. Antepectus sand-yellow, but generally with the middle line of the sternum black; mesosternum, excepting its lateral lobes and posterior margin, black; metasternum also black. Legs sand-yellow, the coxæ more or less black, as also the apex of the tibiæ, and a band on the tips of the second and third tarsal joints; nails generally testaceous. Scutellum black, minutely punctate, finely pubescent, arcuately impressed before the middle and with a slight elevated hump each side, usually carrying a yellow spot; the apex acute, broadly yellow, or with two yellow, approximate spots, the lateral edges sometimes yellow. Corium sand-yellow, or whitish and yellow, minutely punctate and pubescent, marked with black or fuscous in very varying proportions, generally with a double black spot on the costal area before the middle, a similar spot behind the middle, and a smaller rounded one at tip; disk next the clavus and the clavus fuscous or blackish, the latter sometimes with a small yellow spot near the inner posterior angle, the former very often with a large yellow spot on the middle of the posterior margin, and often the margin itself yellow; membrane sand-yellow, sometimes clouded with fuscous, and with a short transverse black band at base, the nervures piceous, long, and nearly straight. Venter pale yellow, finely pubescent, more or less blackish at base, and streaked on the disks of the segments each side, and sometimes with a row of black points a little way from the lateral margin; the genital segments and ovipositor more or less blackish. The spots on the costal area are frequently wanting, or have only traces present; occasionally the tip of the slender cuneus is black. Generally the whitish spots at the apex of the discoidal area of the corium are present and very conspicuous.

Length to tip of venter 5-6 millimeters; to tip of membrane 6-7½ millimeters. Width of base of pronotum 2½-3 millimeters.

First obtained in Cuba; afterward in Sonora, Mexico; since then on the sea-coasts of Massachusetts, North Carolina, and Georgia. I have met with it in large numbers on the sea-coast of Worcester County, in Maryland, in July and August. It lives on the pale sands not remote from the beach, and the darker varieties may be met with running briskly over the gray or blackish sandy mud, neglecting the dry spots, but often swarming upon the moist places.

The genital segment of the male has a long, curved, acutely tapering appendage, and two shorter and straighter approximate ones in the middle, superiorly.

2. *S. ligata*.

Acanthia ligata Say, Heteropt. New Harmony, 34, No. 1.

Form the same as in the preceding, black, a little shining. Head a little narrower, black, with a yellow arc on the arched base; the margins of the orbits of the eyes, the cheeks, tylus, and collum of the throat more or less yellow; vertex with two impressed oblique lines converging before the ocelli, a short, longitudinal one outside of each ocellus, and a short, wide groove on the middle of the raised front; the front generally bounded beneath by a transverse yellow band. Rostrum reaching upon the intermediate coxæ, slender, piceous, the basal joint yellow, with its apex black. Antennæ piceous or black, the basal joint paler above, short and thick; the apical joint a little shorter than the third, but very much longer than the basal one. Pronotum transverse, moderately flat, with the anterior lobe, omitting the outer margin, very prominently convex, indented, and bounded by an impressed line; surface black, shining, exceedingly minutely punctate, very finely pubescent; the lateral margins white, abruptly recurved along their whole length, and a little concave; posterior margin deeply, concavely sinuated, with a yellow spot each side, and a smaller one in the protracted, obliquely truncated angles; the extreme outer angle with a short tubercular ridge. Antepectus black, broadly margined all around with whitish, minutely punctate and finely pubescent; remaining pectoral divisions dull black, finely pubescent; margin behind and outside with white, and with extero-posterior lobes also white. Coxæ black, terminated and margined with white; femora lineated, with black on the inside and outside, either throughout or in part; the knees and lines upon the tibiæ and their ends, the basal joint of tarsi, and the ends of the second and third joints also black; nails pale piceous. Scutellum black, very minutely punctate, finely pubescent; a short, linear, yellow spot on the margin, at the outer end of the transverse impression, and the acute tip with a more or less slender spot each side. Corium black, finely, closely punctate and pubescent; the costal margin, a longish double spot on the suture a little behind the base, a similar but larger spot on the middle, a third, either double or triple, near the apex, two or three smaller ones near and on

the posterior margin, and one near the inner angle of the clavus] yellow; the base of the costal margin is less expanded than in the preceding species; membrane blackish, with a transverse series of oblong, pale spots behind the base; the cuneus yellow, but black at base. Venter black, polished, very minutely punctate, remotely, finely pubescent, the segments margined behind and exteriorly with white. Male genital segment very closely set with long bristles, with still longer, very slender, strongly curved appendages, and with two short teeth on the middle superiorly. The other attachments are not disclosed in my specimens.

Length to tip of venter 4-5 millimeters; to tip of membrane $5\frac{1}{2}$ -6 millimeters. Width of base of pronotum 2-3 millimeters.

A sprightly species, which inhabits dark rocks in the beds of running creeks and brooks in the metamorphic region of Maryland; and of Eastern Massachusetts, near Waltham and West Cambridge, from May till October. It flies from rock to rock on such as are not covered by the water, and from its wariness and activity is quite difficult to capture.

Mr. Kennicott found specimens in Illinois; others have been sent to me from Ottawa, Canada, by Mr. Billings. Mr. Scudder collected it near Lake Winnipeg. Mr. Sanborn met with it on the Magalloway River in Maine, and on a brook near Andover, Mass. The Abbé Provaucher sent me specimens from Port Neuf near Quebec, and Mr. Say's came from Indiana.

3. *S. confluens*.

Acanthia confluenta Say, Heteropt. New Harmony, 25, No. 5.

Acanthia confluens Say (emend. Le Conte), Complete Writings, i, 361, No. 5.

"Black; membrane of the hemelytra with a blackish band. Antennæ pale at base; head and thorax immaculate; corium with a large marginal spot before the middle, and another at tip, two small spots; membrane with fuscous nervures and a continuous, blackish, arcuated band on the middle; feet whitish, tarsi with blackish tips; thighs with an obsolete brown line; venter whitish at tip."

"Length to tip of hemelytra one-fourth of an inch.

"Inhabits the United States.

"The band of the membrane does not reach the inner margin. It is equal in size to *A. ligata*."

Unless this is a variety of *S. signoretii*, I am not acquainted with it. Some of the characters agree well with that species, but certain discrepancies separate it from any that I have yet seen.

Fuller series of these interesting insects are yet needed to do full justice to their relationships, and to settle their position in the scale of the *Hemiptera*.

4. *S. pellita*, new sp.

Broad-ovate, dull ochreo-testaceous or clay-yellow, above clothed with erect, moderately long, close, fuscous pubescence, which is longer on the head and margins of the pronotum. Face longer, more oblique

and less vertical than in *S. sphacelata*, the front less prominently convex, and the sutures not so distinct; vertex either dusky, or with a small, black spot on the middle, and with a narrow black base; its surface very flat and the eyes very large and prominent; the base of the head forming a distinct neck, which is broader than the diameter in front of the eyes. The tylus pubescent, but the cheeks and gula bald and whitish. Antennæ long, dusky, beset with long, dark hairs; the two first joints clay-yellow; the basal one stout, short, a little thicker toward the tip, second longest, feebly thickened on the extreme tip; third and fourth scarcely thinner than the second, the fourth a little shorter than the third, but not much longer than the basal joint. Rostrum reaching near to the middle of the posterior coxæ, pale at base, piceous at tip. Pronotum polished, transverse, clothed with long, erect, dusky pile, remotely punctate; the lateral margins oblique, with the edge broad, thin, recurved; the anterior angles blunt, but almost rectangular; the collum slender but distinct, blackish; anterior lobe high, very convex, dusky in front, and bordered by a deeply impressed, piceous line, having a few coarse punctures across the middle, and remote finer punctures in the impressed lines; pleuræ pale, finely sericeous pubescent; sternum paler, bald, darker posteriorly; the impressed arc in front of the anterior coxæ piceous. Coxæ pale yellow; legs dark luteous, with dusky hairs; thighs somewhat pointed with brown; the tibiæ with a piceous tip and spines, and the tips of the tarsal joints piceous, the nails paler piceous. Scutellum a little convex at base, polished, pubescent, a little punctate on the base and middle, which are also more or less infuscated. Corium broad, pale luteous, closely, obsoletely punctate, erect, pubescent; the base of costal margin expanded and broadly rounded, the costal area very wide, the sutures and outer margin brownish; membrane paler, the nervures long and rather straight, piceous, bounding five large areoles. Venter highly polished, clothed with long, pale pubescence, minutely and obsoletely punctate. The membrane is not conspicuously distinguished at first sight from the corium, and the latter when held up to a strong light appears flecked and dotted with brown. The disk of the venter is occasionally a little infuscated. Male genital appendages apparently like those of the preceding species. Occasionally there is a series of brown dots on the venter near the connexivum.

Length to tip of venter 4-5 millimeters. Length to tip of membrane $5\frac{1}{2}$ - $6\frac{1}{4}$ millimeters. Width of base of pronotum $1\frac{1}{2}$ -2 millimeters.

Very abundant near the sea-coast of Eastern Massachusetts. Near Chelsea, July 9; and near Charles River, in the vicinity of Newtonville.

The posterior angles of the pronotum are obliquely protracted, flattened, obliquely truncated, and with a slight convexity next the outer angle.

5. *S. sphacelata*, new sp.

Elliptical, dusky, testaceous, dull, clothed above with minute, close,

appressed, fuscous pubescence. Head stout, obliquely curving, almost vertical, pale tawny, inscribed with black on the vertex and with a black spot behind, the base convex; clypeus longitudinally indented at the base of the tylus; front with an indented, oblique, brown line each side, and the usual impressed line in the middle; basal margin of the eyes and an impressed line bounding the quadrangular bed of the ocelli blackish; ocelli honey-yellow. Rostrum reaching upon the base of the posterior coxæ, slender, yellowish, becoming piceous toward the tip. Antennæ stout, setose, pale flavo-piceous, more or less dusky, particularly on the last two joints, the basal pale, short, thickened toward the tip; second joint very long and slender, faintly thicker at tip; fourth much longer than the basal and a little shorter than the third. Pronotum transverse, closely punctate, short, the sides very oblique, broadly reflexed; the anterior margin truncate, with a slender collum extending along its entire length, the anterior angles rectangular; the posterior margin concavely a little sinuated, with the outer angles moderately lobed, truncated at the end, and a little folded, and bounded on the inner side of the fold by an impressed short line; the anterior lobe moderately convex, variegated with black, transversely impressed, and with a few coarse punctures in the impression; the impressed line environing the lobe sharply defined, brown, and set with small punctures. Prosternum whitish, a little inscribed with piceous, finely sericeous pubescent; mesopleuræ black, sericeous pubescent, more or less bounded and invaded with tawny; metapleuræ tawny, sericeous pubescent. Coxæ a little piceous at or near the base; legs tawny; the femora more or less dotted with brown, pubescent; the apex and spines of the tibiæ and the ends of the tarsal joints dark piceous; nails pale piceous. Scutellum finely, closely punctate, yellow, blackish on the base and disk, finely sericeous pubescent. Corium pale, dull clay-yellow, remotely sericeous pubescent, paler at base and tip, a little more coarsely punctate; the costal margin broadly arcuated at base, the expansion there wide and thin; costal area broad, pale, infuscated on the inner side, sutures, and nervures; centers of a few of the outer, discal, and apical areoles whitish, with dusky nervules; the clavus dusky; membrane pale, dull testaceous, with strong, slightly curved, piceous nervules, inclosing five long areoles. Venter pale, obsoletely punctate, closely invested with pale, minute, prostrate pubescence.

A variety of the male is more dusky on the hemelytra, has the disk of the venter (excepting the edges of the segments) piceous, and irregular series of brown dots on the sides. The male genital segment is long, semi-oval, densely set with long hairs.

Length to tip of venter 4-5 millimeters; to tip of membrane 5-6 millimeters. Width of base of pronotum $1\frac{3}{4}$ -2 millimeters.

This species is exceedingly abundant on the discolored sandy and marshy brown spots of the tide-water districts of Eastern Massachusetts and Maryland. Some of these tracts of country are no longer within

the reach of the tide, although they were at a former period; but still these insects remain there, although apparently in diminished numbers. The salt mud seems to afford them the conditions best suited to their development, and on such spots they may be found in all stages of development and in unnumbered multitudes. As far as I was able to collect them (which was difficult because of their activity and close resemblance to the soil), I found the males to be in the proportion of two to fifteen females. Yet I do not think that this would be the full proportion if we were able to collect them exhaustively over a locality in which they occurred of average abundance.

Specimens were collected by me at Newtonville, Chelsea, Lynn, and Braintree, Mass., in July; also on Sinepuxent Beach, Maryland, in July and August.

Specimens have been found also in Cuba, by Prof. Felipe Poey, which were smaller than the average of those from the United States.

An individual from San Diego, Cal., has the scutellum black, excepting only some small marks of yellow on the sides, and the punctures of the scutellum are coarser than those of the pronotum. Its length is only $4\frac{1}{2}$ millimeters, and the width of the pronotum is $1\frac{3}{4}$ millimeters.

6. *S. hirta*.

Acanthia hirta Say, Heteropt. New Harmony, 34, No. 2.

"Brownish, darker before. Body densely hairy, dull yellowish-brown or fuliginous; head a little darker at base; thorax blackish before the transverse line. Scutel blackish. Hemelytra conspicuously hairy, with dull yellowish spots, as well on the membrane as on the corium. Pectus a little varied with; the remaining inferior surface, including the feet, immaculate.

"Length to tip of hemelytra under one-fourth of an inch."

"This species may be recognized by its more obviously hairy vesture; its color is also paler than usual in this genus. Inhabits Indiana."

I have tried to reconcile some of the varieties of the two preceding species with this description, but all of them fail to fit it. Accordingly, it has here been placed separately until actual acquaintance shall settle its identity.

B. Membrane with four areoles:

a. Membrane almost confused with the corium; pronotum in front almost conical, the anterior lobe longer than the posterior one:

7. *S. coriacea*.

Salda coriacea Uhler, Fifth Ann. Rep. U. S. Geog. Surv. for 1871, 1872, p. 421, No. 2.

Form similar to that of *S. littoralis* Linn., but much narrower, very elongate-ovate, black, highly polished, minutely shagreened. Head oblique anteriorly, distinctly shagreened, sericeous pubescent, the base moderately wide, slightly convex, forming a distinct neck; ocelli honey

yellow, lacking the raised chevron in front of them, and having traces only of the oblique grooves and central line; front moderately flat, the tylus prominently raised, polished, bald, cylindrical; the labrum much broader, acutely angular at tip, a little longer than the tylus, and of the same testaceous color, or both black. Eyes large, prominent, brown, placed very obliquely. Rostrum reaching to the posterior coxæ, piceous, paler at base and tip. Antennæ black, remotely bristly, the first two joints often paler above; the basal joint stout, increasing in thickness beyond the base; the second joint more than twice as long as the first, a very little enlarged at tip; the third and fourth longer than the basal, subequal, the third a little thicker, both slender on the ends. Pronotum subcampanulate, narrow, very much rounded in front, the lateral margins flattened and a little reflexed, but tapering very slenderly in the direction of the collum, before reaching which it turns downward and fades out; the anterior lobe very narrow, but strongly convex, indented on the middle and constricted in front, more or less golden pubescent, and punctate in the depressed lines; the posterior lobe flattened, transversely a little wrinkled, shagreened, and somewhat pubescent; the posterior margin deeply concavely sinuated, the humeral angles produced, broad, flat. Scutellum densely shagreened, sparingly pubescent, a little convex at base, and depressed before the tip. Prosternum either black, or broadly margined each side behind with white, and, together with the disks of all the pleural pieces, pubescent and rugulose. Coxæ terminated with piceous or testaceous, the femora pale piceous or yellowish, darker at the knees, and sometimes with a few brown dots on the sides; tibiæ yellow, infuscated at tip, and with the spines piceous; tips of the tarsal joints dusky or piceous, with the nails paler. Hemelytra highly polished coal-black, remotely set with shallow punctures, faintly golden pubescent, the costal margin strongly arcuated, at base broadly expanded, and a little upturned, the edge recurved, and the area very broad, the upturned margin continued tapering to near the tip of corium; the clavus bounded on the inner submargin and outer suture by impressed punctate lines; membrane almost as thick as the corium, black, tinged with piceous, sometimes with about three pale brownish spots in the longer areoles. Venter brilliant black, closely, minutely punctate, coated with sparse, fine pubescence. The hemelytra are wider at base than the pronotum, and they gradually widen in their curve posteriorly.

Length to tip of venter 5-6 millimeters; to end of membrane 6-7 millimeters. Width of base of pronotum scant to full 2 millimeters. Full width across the corium 3-3½ millimeters.

The greatest number of specimens thus far acquired have been from Eastern Massachusetts. Mr. Sanborn collected several near Andover; Mr. Scudder secured one in the vicinity of Lake Winnipeg; Robert Kennicott found it in British America, near Mackenzie River; other specimens have been sent to me from Northern Illinois; and the Museum of

Comparative Zoölogy has specimens from British Columbia, collected July 14. The genital segment of the male is wider than long, almost gibbous, with the central attachments stout, curved toward each, and the exterior appendages long, slender, and overlapping each other when at rest. A specimen, the original type, was taken at Ogden, Utah, and another by B. H. Smith in the region of Denver. The nymph, from Massachusetts, has the usual 2-jointed tarsi, is broader and relatively flatter than the imago, and much resembles, particularly in the form of the abdomen, the common oriental cockroach.

8. *S. anthracina*, new sp.

Form of the preceding, but still more slender, the pronotum narrower and more convex, and the wing-covers very arched and decurving over the body like the shell of a terrapin. Deep, coal-black, shining. Head moderately narrow, minutely pubescent; the eyes very large, prominent, and oblique; face long, oblique, dull black, rugulose, with the impressed lines faint, and the shield of the vertex obsolete; base of head forming a distinct neck, coarsely shagreened and rugulose, a little flattened on top, rounded off posteriorly. Rostrum reaching to the posterior coxæ, piceous-black, paler at tip. Antennæ stout and long; the basal joint long, black, not much thicker and but little shorter than the third; second about twice as long, yellow, black at base, dusky, and a little enlarged at tip; third and fourth dusky, subfusiform, stout, the latter a little shorter than the third. Pronotum like the basal half of a funnel—very narrow anteriorly, sparingly sericeous pubescent, finely, obsoletely punctate and shagreened, the sides anteriorly compressed, the callosities obsolete, the transverse impressed line abbreviated at each end, punctate; the posterior margin concave, with the posterior angles produced, oblique; the lateral submargin a little flattened, coarsely shagreened, the edge reflexed, turned down anteriorly, and thinning out. Pectoral pieces rugulose in part, deep black. Legs yellow, the coxæ black or piceous, with the ends more or less yellow; anterior femora with a few brown dots, tip of tibiæ and last tarsal joint piceous. Scutellum coarsely, irregularly rugose, excepting the apex, which is nearly smooth. Hemelytra of almost equal thickness throughout, very convexly inflated, and decurving on the sides and posteriorly, slightly pubescent, polished, obsoletely, remotely punctate, the punctures of the deep sutures coarse and distinct; the membrane hardly distinct from the corium, the basal thick nervure obsolete. Venter polished, closely golden pubescent.

Length to tip of venter 4–6 millimeters; to tip of hemelytra $5\frac{1}{2}$ –7 millimeters. Width of base of pronotum $1\frac{3}{4}$ –2 millimeters.

Inhabits York County, Pennsylvania. Collected by the late Dr. F. E. Melsheimer, and by myself in the neighborhood of his farm.

9. *S. crassicornis*, new sp.

Still more slender than the preceding species, brassy-black, very highly polished, the upper surface with black erect pubescence.

Head long, anteriorly oblique, moderately long and narrow, the eyes very obliquely prominent; vertex a little rugulose, the front dull, somewhat shagreened and flattened; the tylus a little prominent, cylindrical, highly polished; the throat concave. Antennæ short, stout, the basal joint short, stout, black, yellow at tip; the second joint yellow, about as long as the third and fourth united, much more slender than either of the others, a very little thicker at tip; third joint much thicker, both third and fourth joints subfusiform, black, more conspicuously hairy equally thick, much longer than the basal one, the last a little longer than the preceding. Rostrum reaching to the tip of the posterior coxæ, rufo-piceous, paler at tip. Pronotum sub-campanulate, long and narrow, with the disk much elevated, very convex, occupying all of the surface excepting the very narrow posterior lobe, twice indented in the center, bounded behind and each side by a deep, transverse, coarsely punctate line, the posterior lobe consisting of only a slightly elevated linear tablet on the posterior margin, the margin proper moderately concave, the angles produced, acute; the sides deeply decurved, with the edge narrowly recurved, thinning out anteriorly, and bending down at the anterior end; the anterior margin truncate; the submargin with an impressed, punctate line. Scutellum strongly elevated at base, a little rugulose, deeply depressed on the middle and posteriorly. Legs and coxæ bright yellow, the femora faintly tinged with brown, and the tips of tibiæ and tarsi piceous. Venter black, minutely pubescent, the apex a little tinged with piceous. Corium and membrane coalescing, both coriaceous, long and narrow, convexly arched, deflexed on the sides, the part representing the membrane running off to an oblique rounded tip, with the nervures almost effaced.

Length to tip of venter $4\frac{1}{2}$ millimeters; to end of hemelytra $4\frac{3}{4}$ millimeters. Width of base of pronotum $1\frac{1}{4}$ millimeters. One specimen from the vicinity of the Saskatchewan River, collected by Robert Kennicott.

This is surely only the dimorph of the form with perfectly developed membrane. In the preceding species, parallel forms occur, the one with a distinct membrane and the other with the membrane thickened and almost as coriaceous as the corium proper; also, the bounding nervure is faint and almost obliterated, almost the same as in this form of *S. crassicornis*.

In the present specimen, the nervules of the membrane are very indistinct.

b. Membrane distinct from the corium; pronotum semilunately trapezoidal and wide:

10. *S. littoralis*.

Cimex littoralis Linn., Fauna Suec., 246, No. 915; Syst. Nat., 451, No. 14.

Salda littoralis Fieb., Europ. Hemipt., 147, No. 15.

Ovate, rather dull black, clothed above and beneath with closely

appressed yellow hairs, the head with a few distant, prominent, black hairs. Head moderately long, the eyes very prominent, the face oblique, carrying a few long, erect, black bristles; base of the head constituting a distinct neck, the throat concave; tylus in the middle and the ends of the cheeks generally yellow, but sometimes totally black; front moderately flat, triangularly emarginate at the base of the tylus, the labrum broad, with the lateral edge sharp, and with a median ridge. Rostrum reaching almost to the middle of the posterior coxæ (in one specimen, not extending beyond the intermediate coxæ), piceous-black, paler or yellowish at tip. Antennæ moderately long and slender, thickly clothed with fine, projecting, black hairs, a few of which are stouter; basal joint yellowish-brown above, dark at base, and beneath, with the basal two-thirds, blackish; second joint slender, dull yellowish, piceous at base and tip, a little shorter than the third and fourth united; third and fourth a little stouter, subfusiform, dusky black, subequal in length. Pronotum subtrapezoidal, the posterior lobe transversely flat, the anterior lobe convex, reaching two-thirds of the length, smooth, bounded by a deeply-impressed line each side and behind, its central fovea small; sides flattened, the recurved edge bending abruptly downward before reaching the collum; posterior third of disk finely crenate-punctate. Scutellum finely crenate-punctate, finely rugulose behind, the depression large, somewhat incurved and well defined. Legs dull yellow; the femora with short, yellow hairs, the anterior ones blackish on the outside, and the middle and posterior ones with two rows of brown dots on each of the outer and inner surfaces; tibiæ with short brown hairs and remote stouter black hairs; first and last joints of the tarsi blackish, the second joint and nails dull yellow. The tarsi are often soiled yellow, with blackish hairs, and with only traces of dusky on the ends of the first and last joints. Venter shining black, very minutely rugulose, clothed with fine sericeous, yellowish, prostrate pubescence, the posterior margins of the segments often pale piceous, and apex of the terminal segment yellow.

Hemelytra minutely scabrous, golden sericeous, appressed pubescent; generally with an oblong yellow spot near the end of the clavus; corium marked on the disk with a longitudinal series of four long yellow spots between the first and second nervules, and near the tip with one or two smaller spots placed more inwardly; costal margin broadly arcuated, turned up, the submargin depressed, broader at base; membrane pale brownish or dirty yellow, sometimes short, and almost confined to the inner length of the corium, the cuneus black and coriaceous, inclosing the outer side of the membrane; the areoles with a series of black spots across the middle, more or less blackish at base and tip, and the nervules deep black.

Length to tip of venter 5-6 millimeters; to end of membrane $5\frac{1}{2}$ -7 millimeters. Width of base of pronotum $2-2\frac{1}{2}$ millimeters.

Common in various parts of Europe, as well in the North as in the

South. In some parts of England, it inhabits the sea-shore. Specimens from the United States have thus far been collected only in Illinois and Utah.

11. *S. polita*, new sp.

Elliptical, highly polished, jet-black, very indistinctly punctate; the whole upper surface set with erect, remote, brown hairs. Head from above short, vertical in front and a little decurving, dull black, densely and irregularly scabrous and rugulose, the raised margin of the clypeus and the tylus ferruginous or pale piceous. Rostrum pale piceous, reaching between the intermediate coxæ; base of vertex a little convex, formed into a distinct neck, contracted on the occiput; eyes very prominent, brown, placed obliquely. Antennæ setulose, moderately long, stout, the two apical joints about as stout as the basal one; basal joint short, blackish-piceous, paler above; second joint much shorter than the two apical ones united, pale piceous or dull yellow; two apical joints dusky black, subfusiform, subequal in length, but much longer than the basal one. Pronotum subtrapezoidal, transverse, short, highly polished; the callosities forming the anterior lobe very convex, not reaching the sides, with a large, indented point in the center; the posterior lobe much shorter, arched, higher than the anterior one, deeply concave, the humeral angles long, broad, and flat, subtruncated, with an oblong tubercle near the outer angle; the impressed line around the callosities very deep-seated, punctate; lateral submargins broadly flattened rugulose, the edge recurved, decurving anteriorly. Pleural pieces dull black, obsolete and minutely punctate; the prosternum very short, scarcely covering the base of the coxæ. Coxæ black; femora dull yellow or ferruginous, the under side of the anterior pair piceous; tibiæ dull yellow, their tips, the tarsi, and nails piceous. Scutellum moderately convex, obsolete scabrous at base; the apical portion a little less prominent than the base, and the depression between them shallow; the surface faintly rugulose. Hemelytra flat, ferruginous, the clavus dusky black, and the costal area jet-black, polished, the whole surface minutely scabrous; the costal margin moderately arcuated, a little broadly and almost uniformly reflexed; membrane very long, pale dull yellowish, somewhat clouded basally, the nervules piceous, long, and almost straight. Venter black, highly polished, minutely punctate and pubescent; the genital segment and sometimes the posterior edges of the others testaceous. The costal margin is testaceous in two specimens, in which the black of that area is much reduced and limited to the posterior portion, inwardly.

Length to tip of membrane $4\frac{1}{2}$ – $5\frac{1}{2}$ millimeters. Width of base of pronotum $1\frac{1}{2}$ – $1\frac{3}{4}$ millimeters.

From San Diego, Cal. Kindly sent to me for examination by Dr. Hagen from the Museum of Comparative Zoölogy.

12. *S. stellata*.

Acanthia stellata Curtis, Ross's Second Voyage to the Arctic Regions, appendix lxxv, No. 24.

"Blackish sericeous; elytra with a pale spot at the center and several at the apex; legs ochereous. Black, clothed with very short shining hairs; thorax transverse, the edge beneath subochereous, as well as the center of the antepectus; scutellum rather large; elytra with the costa reflexed at base, a semitransparent spot at the base, another on the disk, and eight or nine arranged in a circle on the submembranous apex; margins of abdominal segments beneath ochereous, and forming a row of dots down each side; legs dirty ocher, somewhat freckled with piceous."

Length 3 lines.

"The head is wanting to the only specimen I have seen; it most resembles *A. zosteræ* Fabr., but it is very distinct from my examples of that insect. As some of its larvæ or pupæ were found, it is probably not uncommon in the polar regions."

The species has not been recovered by any one in North America, and it still remains unknown to students in this country.

13. *S. lugubris*.

Acanthia lugubris Say, Heteropt. New Harmony, 34, No. 3.

"Body black, subopaque. Head between the antennæ with three yellowish points; antennæ, first and second joints dull yellowish before, Thorax and scutel immaculate. Hemelytra immaculate on the corium, or with an obsolete dull yellowish point on the middle of the tip; membrane with two or three obsolete dull yellowish spots, inner margin and tip. Beneath with a yellowish spot before each of the anterior feet. Feet pale yellowish; tibiæ and tarsi more dusky; thighs, particularly the anterior and posterior pairs, with a more or less dilated black line toward their tips; coxæ black, the anterior pair yellowish at tip, remaining pairs slightly tipped with yellowish."

"Length to tip of hemelytra less than three-tenths of an inch."

"For this species I am indebted to Nuttall, who obtained it in Missouri."

This description suits most nearly a spotted variety of *S. littoralis* Linn. from Illinois; but, as I do not possess a specimen to which this description will rigidly apply, I must defer the reference until a later opportunity offers.

C. *Membrane very distinct from the corium* :

a. *Pronotum semilunate, depressed* :

14. *S. deplanata*, new sp.

Oval, robust, dull black, the upper surface remotely appressed, golden pubescent, and with a few erect, remote, brown hairs. Head from above

short and blunt, minutely, densely scabrous, the base forming a neck, a little convexly elevated, the eyes moderately prominent, brown; front almost vertical, a little oblique, closely golden pubescent, triangularly depressed before the ocelli, the face a little flattened; tylus much shorter than the labrum, they, and the ends of the cheeks and bucculae sometimes yellowish. Rostrum generally reaching upon the base of venter, but sometimes a little shorter, piceous-black, becoming yellow at tip. Antennæ very slender, black, pubescent and setaceous; the basal joint above and the second joint excepting the tip sometimes dull yellow, the former very short, not as long as the eye; second joint about twice as long, slender, much shorter than the last two united; third and fourth subequal, very slightly thicker than the second, a little subfusiform. Pronotum semilunate, short, depressed, dull black, minutely shagreened, but with the broad, thin, depressed lateral submargins more coarsely so, the margin a little turned up, but not abruptly reflexed; anterior lobe defined by a lunate, impressed, punctate line, hardly elevated, longer than the posterior lobe, and with a deeply indented point in the center; humeral angles broad, moderately prolonged, with a long tubercle next the outer angle; posterior margin deeply concave; the anterior angles rounded off, and the anterior margin with a narrow collum. Prosternum and pleuræ shining black, golden pubescent, somewhat rugulose in places, very minutely scabrous. Legs black or soiled yellow, pubescent, and with some long erect hairs intermixed; the femora when yellow more or less black beneath, and dotted with piceous on the two sides; tibiæ dull yellow, piceous at base and tip, with the spines piceous; tarsi soiled yellow, with the basal and apical joints or their apices piceous; nails very pale piceous. Scutellum large, almost flat, slightly depressed on the disk, densely scabrous, and on the apical part a little rugulose. Helytra dull black, almost flat, densely shagreened, and depressed golden pubescent; costal margin expanded and arcuated at base, the lobe upturned, and rapidly tapering to a termination behind the middle; corium marked with short, white or yellowish, linear spots, of which two are on the inner line of the costal area, a longitudinal series of about four near the outer side of the discoidal area, and two or three on the inner area, and a small spot near the inner angle of the clavus; membrane soiled white or yellow, with a cloud at base and tip, and about two transverse series of fuscous oval spots in the areoles, sometimes with the apexes of the areoles more or less blackish, the nervules blackish, and the outer areole broad-triangular. Venter short and broad, shining black, closely and finely clothed with prostrate yellowish pubescence.

Length to tip of venter $4\frac{1}{2}$ – $6\frac{1}{2}$ millimeters; to tip of membrane –8 millimeters. Width of base of pronotum $2\frac{1}{2}$ –3 millimeters.

Inhabits Maine; Massachusetts; New York; Maryland, in September. Texas; New Mexico; Missouri; Illinois; Michigan; Minnesota;

Mackenzie River Region, Robert Kennicott; Canada; near Saskatchewan River, and in the Province of Ontario.

Specimens occur which are destitute of white spots upon the corium and clavus. I found numerous specimens upon the mud of the black marshes of Brighton and Cambridgeport, Mass., in the month of July.

The remarks under *S. lugubris* Say, in my paper printed in Dr. Hayden's Bulletin, vol. ii, No. v, p. 67, belong to this species.

15. *S. interstitialis*.

Acanthia interstitialis Say, Journ. Acad. Phila., iv. 324, No. 1.

Ovate, dull black, closely bronze pubescent, with a few remote, erect, black hairs on the head, pronotum, and base of the hemelytra. Head from above broad and short, vertical, with a very short neck behind; the eyes large, brown, moderately projecting above the line of the vertex; base of head moderately convex, minutely shagreened, separated from the ocelli by a transverse impressed line; front almost flat, densely, minutely scabrous, the longitudinal groove obsolete; reflexed edge of the clypeus yellow or piceous; tylus a little prominent, slightly narrower inferiorly, yellowish, a little shorter than the labrum, bald; labrum broad, yellow, a little ridged on the middle line, with the sides sloping, the tip bluntly triangular and set with stiff hairs. Upper margin of the bucculæ yellow; rostrum reaching behind the end of the posterior coxæ, dark piceous, paler at tip. Antennæ slender; basal joint short and stout, dull yellow, with a black line beneath and sometimes obscure on the middle above; second joint a little shorter than the third and fourth conjoined, yellowish or pale piceous, darker on the middle, slightly thickened at tip; third and fourth subequal, dull black, each longer than the basal one, and stouter than the second, subfusiform. Pronotum lunate, densely coated with prostrate golden pubescence and with longer black hairs on the margins and before; lateral margins moderately and abruptly reflexed, the submargin broadly depressed, of uniform width throughout, minutely scabrous; surface generally minutely scabrous; the callosities forming a transverse ridge, sharply bounded by an impressed punctate line, which curves around the sides and stops at an indented point some distance behind the anterior margin; posterior margin deeply concave, the lobed humeral angles obliquely truncated and with a long tubercle near the outer corner. Scutellum feebly convex, closely minutely scabrous, lunately impressed, the apical division a little flattened, obsoletely rugulose, with the edge yellowish. Pectoral pieces polished, black, clothed with prostrate whitish pubescence, the prosternum slenderly margined with white. Legs dull yellow, generally with a black line on the under side of the femora and tibiæ; the femora often with piceous dots on the front and back faces; tibiæ tipped with piceous, with piceous spines, and sometimes with piceous spots or faint bands at the base of the spines; tarsal joints tipped with piceous and the basal joint entirely piceous, the nails pale piceous.

Hemelytra black, almost flat, minutely scabrous, with close, appressed, golden pubescence, and with longer, remote, black hairs exteriorly and basally; the costal margin moderately arcuated, with the edge abruptly, narrowly recurved, and black or rarely piceous; corium with four or five whitish oblong spots, of which there is a double one on the costal area behind the middle and a similar one near the tip, a large central one on the discoidal areole and a smaller one farther back; and at the tip of this areole, on the suture, is a larger triangular spot, or very small white spot behind a velvety-black one near the tip of the clavus; membrane dull whitish, dusky at base and tip, with black nervules, and across the middle a series of oblong blackish spots. Venter black or tinged with piceous (or sometimes pale brownish); the apical segment entirely, or only a broad margin, whitish.

Length to tip of venter 3-4 millimeters; to tip of membrane 4-5 millimeters. Width of base of pronotum $1\frac{3}{4}$ - $2\frac{1}{4}$ millimeters.

Inhabits Missouri, Mr. Say. Specimens in my own collection were taken at Saint Joseph, Mo., by Mr. E. P. Austin; by myself at Andover, Mass.; and near Baltimore, on the dark sand of a loamy spot near a brook, in May and June; also in Dakota, Nebraska, and Illinois. Some variation occurs in this form, such as the greater expanse of the white spot upon the apex of the corium, and of the pale colors of the prosternum and legs.

The references to other localities in my List of Hemiptera, published in Dr. Hayden's Bulletin, p. 67, must be expunged, as they refer to other forms, which, for the present at least, we are impelled to consider species.

16. *S. luctuosa*.

Salda luctuosa Stål, Eugenies Resa, Hemipt., 263, No. 123.

"Oval, blackish, moderately polished, having the form of *S. pallipes*, but the colors and markings similar to *S. littoralis*. Head black, clothed with fuscous hairs, with eyes somewhat broader than the anterior width of the pronotum; eyes moderately prominent. Antennæ somewhat more than half as long as the body, blackish-fuscous. Rostrum blackish. Pronotum three times as wide as long, anteriorly about one-half as wide as at the base, the posterior margin broadly sinuated, the sides scarcely arcuated with the margin, slenderly reflexed; blackish, clothed with somewhat depressed fuscous pile; the anterior lobe a little elevated. Scutellum blackish. Hemelytra blackish, sparingly clothed with prostrate pubescence, the costal margin at base somewhat expanded; membrane very distinct, infuscated, having four areoles. Beneath blackish. Legs obscurely fusco-testaceous, the tibiæ and tarsi somewhat paler, the former sparingly bristly."

Length ♂ 4 millimeters. Width of pronotum $1\frac{1}{2}$ millimeters.

"Inhabits San Francisco, Calif."

This is a translation of the Latin description given by Dr. Stål in the memoir quoted above.

It is as yet not in any of the collections of the entomologists or museums of the Eastern United States.

17. *S. coxalis*.

Acanthia coxalis Stål, Enum. Hemipt., iii, 149, No. 4.

“Black, shining, clothed with very short gray pubescence; the labrum, tylus, two small spots on the front of the head, the lateral margins of the pronotum slenderly from the base to beyond the middle, the front margin of the anterior acetabulæ, and the legs, pale yellowish. Hemelytra soiled-white, with fuscous nervures; the clavus, the inner margin, and base of the corium exteriorly with two longitudinal lines black, and next to the apex with pale spot. Coxæ and the extreme apex of the tibiæ black. Posterior margin of the segments and the posterior part of the sixth segment of the female whitish.

“Length ♀ $4\frac{1}{2}$ millimeters. Width of pronotum 2 millimeters. Width across the hemelytra $2\frac{1}{2}$ millimeters.

“Inhabits Cuba.”

This species is also unknown to me. The above description is a translation of Dr. Stål's Latin one, from the paper cited above.

18. *S. pallipes*.

Salda pallipes Fab., Syst. Rhyng., 115, No. 12.—H. Schf., Wanz. Ins., vi, fig. 600.

Moderately long-oval, thickly clothed above with appressed golden pubescence, and fringed with almost erect pile. The head, fore part of the pronotum, and basal parts of the hemelytra with erect black hairs. Head from above short and blunt, the front nearly vertical, dull black, moderately flat, minutely granulated, clothed with appressed golden pubescence and some longer black erect pile; inferior margin of clypeus emarginated in the middle, thick, elevated into a slight ridge, yellow, smooth; tylus a little prominent, bald, narrowing inferiorly, and, together with the labrum, reddish-yellow; the latter a little longer, pubescent, infuscated at tip; rostrum reaching to the tip of the middle coxæ, piceous; antennæ black, with short hairs; the first and second joints more or less fulvous, black above and beneath. Ocelli black. Pronotum very transverse, minutely scabrous, the sides arcuated, flattened, the edge a little reflexed; the posterior margin very concave across the scutellum; the humeral lobes roundly produced; callosities occupying half the length, moderately prominent, the central fovea deep and transverse, the side-impressions obsolete, the bounding furrow deep; scutellum convex, the central depression deep, sharply defined behind; the base finely scabrous; the apical half rugulose. Hemelytra slightly convex; clavus black, the apex with a large or small wedge-shaped yellow spot; corium black at base, sharply distinguished from the rest of the pale yellowish surface; the basal one-third of the costal margin

rounded and a little broadly expanded and turned up, the margin black, and with a black spot at the apex; costal area with two long contiguous black spots, nearly forming a black streak, the second interrupted by a white dot; between the first and second nervures basally a black spot, with a broad ring of the ground-color around it; below this ocellus is a black spot; at the end of the second nervure is another black spot, sometimes extended to the inner angle; and beyond this nervure, on the disk, is a long black spot; nervures black, sometimes pale posteriorly, and occasionally destitute of the intervening black spots; membrane pale yellowish or white; the nervures piceous or black, excepting the exterior one, which is generally pale, with a black spot at its tip; across the middle is a series of oblong spots, and sometimes a larger one near the base of the third cell, the apical margin generally infuscated; sternum black, the prosternum slenderly margined behind with yellow; legs yellow, with fine, short, yellow hairs; the femora having two rows of brown points on the inner and outer faces, the under side with a blackish streak; tibiæ with black spines and apex, the anterior pair with a blackish line on the under side; apex of the last tarsal joint black, the nails pale brown; abdomen black or blackish, the posterior edges of the ventral segments whitish, that of the apical segments broadly whitish.

Length 3-5 millimeters. Width of pronotum $1\frac{1}{4}$ - $1\frac{1}{2}$ millimeters.

Dr. Stål reports this species to have been taken in Sitka. Specimens belonging to the Museum of Comparative Zoölogy, kindly sent to me for study by Dr. H. A. von Hagen, were taken at San Diego and Bard's Ranch, Cal. These specimens are larger than those from the Rocky Mountain region, of which many have passed through my hands, from various localities in Utah, New Mexico, etc. In the western suburbs of Denver, Colo., it may be met with in untold numbers on the dark, damp, sandy, and muddy soil, during the month of August. A few specimens occurred to me on dark, damp soil, next the stream of water running down the Beaver Brook Gulch, and also in similar spots in Clear Creek Cañon. I can find no characters to separate it from specimens which I collected in Hayti on the marshy banks of the Grand Anse River in May, nor from Cuban specimens received from Professor Poey. It occurs also in New Jersey and on the dark mud of the sea-coast of Maryland.

Dr. Packard collected it near Georgetown, Colo., July 8, at an elevation of 9,500 feet, and also near Salt Lake, Utah, July 27.

19. *S. reperta*, new sp.

Closely resembles *S. marginalis* Fallen. Deep, dull black, sparsely clothed with golden prostrate pubescence, and the head and pronotum with a few erect black hairs. Head above broad and blunt, the base forming a short neck; the surface minutely scabrous; eyes prominent, brownish, moderately oblique; front moderately narrow and flat, not

distinctly arched at base; the lower margin of the clypeus callous, feebly recurved, testaceous, black in the center; tylus and labrum forming an arched bridge, dull ochereous, the former a little concave on the sides inferiorly, the latter piceous at tip and a little pubescent. Rostrum reaching upon the intermediate coxæ, dark piceous, paler at tip. Antennæ moderately stout, clothed with pale, stiff hairs; basal joint dull yellow, black beneath; second piceous, paler at base and tip, not twice as long as the basal one, and a little thickened at tip; third and fourth dull blackish, subfusiform, subequal, each longer than the basal one. Pronotum transverse, subtrapezoidal, rather flat, with the sides very oblique, hardly curving; the submargin broadly depressed and gradually narrowing toward the front; the callosities feebly elevated, deeply and broadly foveate in the center, bounded by a deeply impressed line; the surface minutely and densely rugulose; posterior margin very slightly concave, with the humeral angles moderately produced, very broad, and with a large, low fold near the outer angle. Scutellum scabrous at base, minutely, transversely wrinkled on the apical half; the central impression lunate, distinct. Legs dull testaceous, very hairy, more or less marked with piceous on the femora, particularly beneath, on the tibiæ, somewhat in spots, the tips, spines, and the basal and apical joints of the tarsi piceous-black, the nails dull testaceous. Sternum and under side of the body shining black, minutely, closely whitish pubescent; the extreme edge of the prosternum and of the ventral segments and a broad end of the genital segment of the female whitish. Hemelytra deep black; the corium closely yellow and black pubescent, densely shagreened, the costal margin moderately arcuated, broadly and continuously flattened, recurved from the base to behind the middle; the costal area with a testaceous small spot behind the middle and two smaller parallel ones near the tip, the middle nervure with a spot near the base, and the middle areole with a larger spot at tip and two or three smaller ones near the tip; the clavus with a small yellow spot near the tip; membrane dull white, fuscous at base and with a broad cloud at tip, a transverse series of oblong fuscous spots across the middle and a spot at the tip of the exterior areole; the nervures piceous or black.

Length to tip of hemelytra 4-4½ millimeters; to tip of venter 3½-4 millimeters. Width of base of pronotum 1½ millimeters.

A few specimens from the Museum of Comparative Zoölogy, collected in Cambridge, Mass.

This is a robust little species, very closely related to *S. interstitialis* Say, and perhaps only a variety of it. But the different shape of the pronotum, with the other details, will at present serve to separate it.

20. *S. elongata*, new sp.

Long-elliptical, narrower anteriorly, dull black, clothed above with prostrate yellowish pubescence, and with a few erect black hairs on the head and pronotum. Head dull black, front very oblique, long and

moderately narrow, convex, forming an 8-sided tablet, which is bilobed above, grooved down the middle, and with the lower side-margins of the clypeus a little carinated, black; an oblong callous spot each side next the eyes yellow; tylus smooth, black, yellow at tip; labrum piceous, pubescent, yellow along the middle line; eyes brown, oblique, and very prominent; base of head convex, forming a rather long neck, densely, minutely granulated; tip of the lower cheeks orange; bucculae and throat dull black, minutely scabrous and whitish pubescent. Rostrum reaching behind the intermediate coxæ, blackish-piceous, paler at tip. Antennæ slender, as long as from the tylus to tip of clavus, piceous; the basal joint stouter, fulvous at tip; the second very long, much more than twice the length of the first, pubescent; third and fourth dull black, pubescent, slenderly subfusiform, subequal, each about two-thirds the length of the second. Pronotum subcampanulate, transverse, densely clothed with prostrate golden pubescence, the anterior part very narrow, with the sides steep, the callosities prominent, convex, rugose, deeply indented on the middle and obliquely so each side of it; posterior lobe about one-half as long as the preceding, deeply, squarely sinuated, the humeral angles obliquely prolonged, flattened, longitudinally sulcated, rugose; the sides broadly flattened, tapering anteriorly, the margin abruptly recurved, and fading out next the column. Pectus polished black, finely, prostrate, whitish pubescent; prosternum very slenderly margined with white. Legs dull testaceous, the femora more or less piceous beneath and on the front and hind surfaces; tibiæ with piceous knees, spines, and tip; tarsi dull testaceous, the basal and apical joints piceous, the nails dull testaceous. Scutellum coarsely, densely scabrous on the prominent base, the impression very distinct, arcuated; the apical division transversely rugulose. Hemelytra narrow, thin, very minutely scabrous, with a very few coarse punctures on basal and costal areoles; clavus black, golden pubescent, having a few coarse punctures and a wedge-shaped yellow spot next the tip, placed on a velvety-black spot; corium yellowish, the costal margin broadly arcuated, the base broadly flattened and turned up, the edge black; costal area broad and long, the base blackish, the middle with a quadrate spot, and near the tip a roundish one; nervures coarse and deep black; the inner areole black, with two yellow small spots next the outer margin and before the apex, and with a larger one at the inner angle; the central areole black at base, next a large yellow spot, and then black with three moderately large yellow spots, the last one is separated from the apical margin by a black line; membrane pale yellowish, blackish at base, with black nervules margined with blackish, and spots at their tips; a marginal blackish line on the apical two-thirds of the outer nervule, and with a transverse series of streaks; oblong spots on the middle of the areoles. Venter black, minutely sericeous pubescent; the middle of the disk and the posterior part of the genital segment yellowish; posterior margin of the segments pale piceous.

Length to tip of venter 5 millimeters; to tip of hemelytra 6 millimeters. Width of base of pronotum 2 millimeters.

One female, the type, is the only specimen that I have seen. It is from British Columbia, and belongs to the Museum of Comparative Zoölogy. It seems to be closely allied to the European *S. latipes* H. Schf.

21. *S. orbiculata*, new sp.

Almost circularly ovate, deep dull black when invested with the clothing, but shining black when rubbed; the upper surface invested with long, erect, golden and blackish, almost matted pubescence. Head wide, from above blunt and short; the front almost vertical, a little curved, clothed with erect black hairs and prostrate golden pubescence; front a little flattened; vertex with an indented point each side near the eye; ocelli small, pale piceous; base of head smooth, not obviously punctate, a little convex, forming a moderate neck; tylus very slightly prominent, shining, pale fulvous; lower edge of the clypeus fulvous, very slenderly recurved; labrum broad, fulvous, invested with pale yellow bristles. Rostrum testaceous, reaching upon the posterior coxæ. Antennæ short, moderately slender, the basal joint short and stout, testaceous; the second quite slender, pale piceous, testaceous at the base and piceous at tip, about twice as long as the basal one; it and the following joints with remote erect hairs; two last joints subequal, long, subfusiform, blackish, longer than the basal joint. Pronotum transverse, contracted at the collum, flattened, the sides oblique but arcuated, with the submargin moderately broadly flattened, of almost uniform width throughout, a little upturned, thick, a little turned in and widened at the posterior angles; posterior margin moderately deeply concave, the humeral angles produced, broad, short, scooped out; anterior lobe with the callosities feebly elevated, but not nearly extending to the lateral margin, the transverse line deeply seated; posterior lobe about one-third the length of the anterior one, indistinctly rugulose. Scutellum not distinctly punctate, short and wide, deeply lunately impressed on the middle, the surface beneath the dense pubescence polished, jet-black. Sternum jet-black, polished, finely whitish pubescent, the pieces of the mesopleura more or less white. Coxæ piceous, paler at tip; legs pale orange or fulvous, the spines and extreme tip of the tibiæ, the basal joint of tarsi, the end of the apical joint, and the nails piceous. Hemelytra flat, disk-like, the costal margin almost semicircular, narrowly flattened and upturned, pale yellow, not wider at base; corium velvety-blackish, densely coated with prostrate golden pubescence and with longer blackish hairs; costal area very wide, with a testaceous spot on the middle entering from the outer margin, and a similar one before the tip; nearly one-half of the posterior margin running from the outer angle testaceous, and the inner edge of the clavus very narrowly of the same color; disk with about four round bluish spots, and a similar spot near the apex

of the clavus; membrane fuscous, a spot at the inner angle, the inner margin, the posterior submargin, and an apical spot, four spots on the bases of the areoles, and four near their tips pale testaceous. Venter black, terminated with white, and closely invested with prostrate whitish pubescence.

Length to tip of hemelytra $3\frac{1}{2}$ – $4\frac{1}{2}$ millimeters. Width of base of pronotum $1\frac{1}{2}$ –2 millimeters. Width across hemelytra 2– $2\frac{1}{2}$ millimeters.

This neat and unusual form of *Salda* has a very wide range of distribution. It occurs in Eastern Massachusetts, Pennsylvania, New York, Illinois, and Texas, and the Museum of Comparative Zoölogy has specimens from Calaveras and San Diego, Cal.

22. *S. humilis*.

Acanthia humilis Say, Heteropt. New Harmony, 35, No. 4.

Elliptical, black, velvety, above closely invested with minute yellow prostrate pubescence; the eyes very large, prominent, round, brown, placed obliquely. Head at base, with a narrow neck, conforming to the width of the front of pronotum, black, dull, minutely scabrous; the front very narrow between the eyes, from above blunt, short, a little flattened, with two indented points each side and one in the middle; tylus slightly prominent, and, together with the labrum, pale ochereous or yellow, the ends of lower cheeks also ochereous. Rostrum reaching upon the posterior coxæ, pale piceous. Antennæ testaceous, slender, and moderately long; the apex of the second joint and all of the third and fourth joints blackish; the second joint about twice as long as the basal one and much more slender; the third and fourth slender, subequal; all but the basal one with erect hairs. Pronotum trapezoidal, transverse, very narrow in front, the sides oblique, a little prominent at the shoulders, the lateral margins very slenderly reflexed, decurved, and lost before reaching the anterior margin; the surface very minutely scabrous; anterior lobe moderately elevated, transversely indented on the middle, the impressed line distinct but not very deep; posterior division a little shorter, moderately flattened; posterior margin a very little sinuated, the humeral angles oblique, short, flat, the outer angles subacute, with an oblong tubercle placed next the outside. Scutellum long, moderately depressed in the middle and more deeply each side, coarsely scabrous at base, finely rugulose on the apical division. Pectus and sternum jet-black, highly polished, closely covered with appressed, fine, white pubescence. Legs pale testaceous; the coxæ black, with white tips; femora broadly banded near the tip with fulvous; tibiæ piceous at tip, and with pale piceous spines; apex of the last tarsal joint black the nails pale piceous. Hemelytra velvety-black, minutely, densely clothed with black and golden pubescence, minutely punctate; the costal margin broadly arcuated, with the edge narrowly reflexed; the costal area broad, pale yellow or white, with a small, black, longish patch at base, another oblong, large spot behind the middle, against the inner

margin, and a trace on the outer margin, and the tip with a transverse black spot; nervures black; middle areole with an oval spot near the outer nervure, basally, a round one a little way behind this, a few specks behind the middle, a dot near the apex inwardly, and a dot near the inner tip of the clavus pale yellow; membrane pale yellow, a little clouded at base and on the apical margin, the apex with a piceous spot on the apex of the outer areole; nervures piceous; the areoles with a transverse series of oblong fuscous spots (sometimes the spots are interrupted, forming a partially double series). Venter black, clothed with prostrate white pubescence, the posterior margin of the segments slenderly piceous; the apical segment of the female broadly white.

Length to tip of hemelytra 3-3½ millimeters. Width of base of pronotum 1¼ millimeters.

Common in Maryland, within the limits of the metamorphic belt, upon damp sand formed by the disintegration of the rocks, near creeks and brooks, in June and July. It is also common in Northwestern and Northern Florida; and specimens have been sent to me from Texas, Illinois, and Pennsylvania. I have also collected it in Cambridge, Mass., and in the vicinity of Washington, D. C. It occurs likewise in Western North Carolina and in Georgia. It is of precisely the same form as *S. cineta* H. Schf. of England and France, agreeing with that species in most of its details, and, upon sufficient comparison, may prove to be the same species.

Family VELIIDÆ.

HEBRUS Curtis.

H. sobrinus, new sp.

Robust, brunneo-fuscous, beneath mostly blackish-piceous, with the sternum, coxæ, and legs testaceous. Head stout, not so long nor so tapering as in *H. pusillus* Fallen; the vertex and face very convex, at the tip thickly hairy. Antennæ dull testaceous, pubescent; the basal joint thickest, narrowed at base, longer than the second; the third longest, slender, of the same thickness as the succeeding ones. Under side of the head and bucculæ dull testaceous; the rostrum slender, reaching upon the venter, dull testaceous. Eyes dark brown, with few and coarse facets. Pronotum broader than long, flattened; the humeri well defined by a brown sulcus; impressed line between the lobes distinct, as also the three indentations upon the center, those each side less distinct; the surface very minutely punctate. Pleuræ darker, having a few, very remote, coarse punctures. Venter smooth, black-piceous, densely sericeous pubescent, margined with dull fulvous. Hemelytra pale brownish, minutely pubescent; the nervures thick, darker; the costal margin almost straight, a little incurved near the tip; membrane scarcely reaching the tip of the venter, pale, dull brown, slenderly margined with paler brown. Tergum fuscous, whitish, sericeous pubescent, the reflexed margins yellow.

Length scant 2 millimeters. Width of base of pronotum $\frac{3}{4}$ millimeter.

A few specimens occurred on the margins of ponds west of Denver.

Family HYGROMETRIDÆ.

HYGROTRECHUS Stål.

H. remigis.

Gerris remigis Say, Heteropt. New Harmony, 35, No. 1.

Collected by Dr. Packard, on July 10, in Denver; at Boulder, June 20; and at Manitou, July 15. It was found also by myself on the still water along the margins of Sloan's Lake; and it was very abundant also on the surface of the irrigating canal proceeding from the cañon of the Arkansas, in August.

LIMNOTRECHUS Stål.

L. marginatus.

Gerris marginatus Say, Heteropt. New Harmony, 36, No. 2.

Dr. Packard collected specimens of it near Manitou, July 15. It was seen by me on the surface of puddles in the western suburbs of Denver, in August.

LIMNOPORUS Stål.

L. rufoscutellatus.

Gerris rufoscutellata Lat., Gen. et Sp. Ins., iii, 134, No. 2.

It was collected by Dr. Packard, at Denver, July 28, and by myself on the surface of small ponds and puddles in the depressions of the plains west of Denver, August 8 and later.

Family NOTONECTIDÆ.

NOTONECTA Linn.

1. *N. insulata.*

Notonecta insulata Kirby, Fauna Bor.-Amer., iv, 285, No. 399.

Notonecta rugosa Fieber, Rhynchotog., 52, No. 7.

This species was quite common in several pools of water standing in hollows near the bed of creek on the outskirts of Denver, August 4 and 5. By the 18th of August, the inhabitants of these pools had gone, and the pools essentially dried up.

2. *N. undulata.*

Notonecta undulata Say, Heteropt. New Harmony, 39, No. 1.

Found in the same pools as the preceding, and at the same time, but much less abundant; also in Sloan's Lake, west of Denver. Larva, nymph, and imago likewise from the latter place, by Dr. Packard, July 10.

Family CORISIDÆ.

CORIXA, Geoff.

1. *C. subtilis.*

Corixa subtilis Uhler, Bull. U. S. Geol. Surv., vol. ii, No. v, p. 73.

A few specimens were met with in Sloan's Lake, on the highlands west of Denver, August 5.

2. *C. interrupta*.

Corixa interrupta Say, Journ. Acad. Phila., iv, 323, No. 1.

A few examples were taken in Sloan's Lake, on the highlands west of Denver, in July by Dr. Packard, and in August by myself.

3. *C. tumida*, new sp.

Pale fuscous, elongated, the whitish lines generally broader than the brown spaces; the surface very obsoletely rastrated on the pronotum, and not rastrated, but faintly uneven, on the clavus and corium. Head longer than wide, white, the vertex tumid, subconically rounded in front, with a blunt ridge along the middle line, which terminates in a carina anteriorly, and in an angular production of the occiput posteriorly; each side of this ridge is a line of coarse punctures, connecting anteriorly with some finer ones; next the inner margin of the eyes the surface is linearly impressed and finely punctate; the occipital margin carinately elevated, and having the angle next the eye depressed and punctate; front long, ovately excavated in its whole length, and in its width below the first third; a large elliptical fossa next the lower angle of each eye invaded by a group of coarse punctures. Pronotum of medium length, somewhat obliquely arcuated behind, pale yellowish, highly polished, with nine very slender, brown, complete lines, and about three shorter ones (sometimes with fewer full lines and more sharp ones); the first line interrupted in the middle; clavus margined with brown basally on the outer margin, and with a slender brown line on the inner submargin; the surface yellowish-white, with a few straight, very short, brown, slender lines at base, some connected with the inner margin and others with the outer margin; the brown lines behind the base slender, wavy, arranged in two series, each starting from the opposite margins, and along the middle coalescing in part, and forming a longitudinal, wavy line; corium highly polished, yellowish-white, the brown lines slender, wavy, forming generally about three transverse series, and coalescing posteriorly to form two longitudinal lines; the costal edge brown, with the epipleura whitish, and having the transverse nervure and a spot before the apex fuscous; membrane with vermiculate brown line behind the middle, more or less coalescing posteriorly. Legs yellowish-white, the posterior ones long, with the hindmost tarsi and tip of tibiæ piceous; palæ of the male very short, tinged with tawny, depressed near the tip, shaped like a shovel, with a round base, very obliquely truncated, leaving the tip quite acute, the inner margin with a few moderately long bristles; fore tibiæ compressed, a little incurved, longer than wide, the outer margins a little arcuated, the posterior submargin with an impressed line, and the anterior margin carinated. Tergum blackish, with the connexivum yellowish; venter blackish, with the surface very minutely, whitish pubescent; the posterior margins of the segments and the connexivum yellowish.

Length to tip of hemelytra 6-6½ millimeters. Width of base of pronotum 1½-2 millimeters.

The pronotum has a short longitudinal carina on the front of the disk.

Inhabits Sloan's Lake, west of Denver. Found there by Dr. Packard on July 10, and by myself in the early part of August. Besides, it occurred in several pools of water on the low grounds of the suburbs of Denver, August 5 and 8. Later, the pools had dried up, and their inhabitants were no longer to be found there.

4. *C. decolor*.

Corixa decolor Uhler, in Packard's Insects Inhabiting Salt Water, Silliman's Journ., 1871, 106.

Found by Dr. Packard, on July 27, in a brook flowing into Great Salt Lake, Utah, and in the lake.

HOMOPTERA.

Family STRIDULANTIA.

CICADA Fab.

1. *C. parvula*.

Cicada parvula Say, Journ. Acad. Phila., iv, 333, No. 5.

Two varieties of this species were collected, June 25, at Lawrence, Kans.

2. *C. synodica*.

Cicada synodica Say, Journ. Acad. Phila., iv, 334, No. 6.

One specimen occurred to me, on August 11, near Cañon City, Colo. It was dead and lodged in the axil of one of the Elkhorn Cacti, which there abound on the foot-hills.

3. *C. putnami*, new sp.

Blue-black, polished, pubescent, narrow, with long hemelytra. Head transverse, bluntly triangular, blue-black, clothed with erect, brownish pubescence, rugose and uneven; moderately flat above, with the orbits a little upturned, and eyes spherical, large, prominent, and projecting over the anterior angles of the pronotum; disk of the vertex convexly elevated, with the middle line deeply grooved, including the bed of the anterior ocellus, and with an arcuated, impressed line each side in the broad depression, anteriorly bounded by a straight, transverse, impressed line; supra-antennal plates orange, deeply excavated to receive the antennæ; antennæ stout, black, the basal joint orange, projecting a little beyond the margin of the plate; hypostoma compressed, margined each side with bright orange, distinctly ribbed, the face longitudinally split, and the gaping edges raised, thick, orange; the front superiorly bluntly semicircular, rugulose, grooved on the middle line and with a large fossa in the center; outer cheeks angular above, carinate, and edged with orange; labrum orange, the rostrum black, but banded with orange at base, the tip reaching well back upon the posterior coxæ. Pronotum short, blue-black, pubescent, dull, rugose, and irregularly tuberculated,

the sides steeply rounded, the anterior margin narrowly, the posterior margin broadly, and the flat, middle line, not reaching to the base, orange; lateral margins a little oblique, deeply decurved on the middle, causing the anterior angle to be upturned, the latter almost rectangular, but blunted; posterior margin a little concave, the outer angles lobate, broad, flattened, obliquely recurved behind the transverse, impressed line which separates the lobes, the outer margin oblique, almost truncate; each side anteriorly with two oblique, impressed lines. Propleuræ orange, rugose, with the margins thickened and a little raised; the other pleural pieces, sternum, and coxæ dull black, hairy, margined with orange; the tympanic fulera and the legs also orange, invested with fulvous pubescence; femora broadly black on the upper, fore, and hinder sides; the anterior pair also black on the under side, having two long, slender, cylindrical teeth, of which the one near the middle is very oblique; apices of the tarsi and nails blackish. Mesonotum polished, blue-black, obsolete rugulose and punctate, the scutellum raised into a V, carried back upon the meta-notum, and blunt and tumid at tip; the meta-notum orange, short, with a black spot on the middle. Hemelytra and wings hyaline, faintly tinged with brown toward the apex; base, tegulæ, and costal nervure orange, the latter long and broadly arcuated; the marginal nervure beyond the anastomosis and all the other nervules blackish-piceous; the costal areole very long and broad, the discoidal also long and broad, much wider at the posterior end; the areole joining the tip of the costal one on its inner side short and triangular; the apical areoles narrow, but not very long. Abdomen black, hairy, the male genital sheath very long, tubular, a little tapering.

Length to end of genital sheath 21 millimeters; to tip of closed hemelytra 26 millimeters. Width of base of pronotum 7 millimeters.

Collected in the vicinity of Clear Creek, Colorado, by Mr. J. Duncan Putnam, to whom I take great pleasure in dedicating this pretty little species. It pertains to the same group as *C. areolata* Uhl., agreeing with it pretty nearly in the shape of the genital organs. But it differs in the prominence of the eyes, in the narrower pronotum and hemelytra, and in the more acutely angular ends of the areoles. Other specimens have been taken at Ogden, Utah, which are identical with the type in color and structure. For the specimen obtained by Mr. Putnam, I am indebted to the kindness of Baron Osten Sacken.

Family MEMBRACIDÆ.

CERESA Fairm.

C. bubalus.

Membracis bubalus Fab., Ent. Syst., iv, 14.

I met with this species at every station in Colorado that afforded moisture sufficient for the growth of willows. The species is quite as abundant and variable as we find it to be in Maryland, Delaware, and

New Jersey. In the mountain-gulches, at the higher levels which admit the development of the willow, I found it in less numbers, of smaller size, and with less prominent thoracic horns. As in Maryland, I took, from a single clump of willow-bushes, a series of forms ranging from the extreme, with short, blunt, thoracic angles, and filled-out or convex disk, to that with long recurved angles and concave disk. In Denver City, it was also found abundantly upon many kinds of weeds growing on the depressed spots near water, as well as upon the willows; and it was only a little less common near Cañon City, where the soil is very different from that near Denver. In Clear Creek Cañon, it was not rare.

ENCHENOPA Amyot et Serv.

E. curvata.

Membracis curvata Fab., Syst. Rhyng., 13, No. 34.

Membracis latipes Say, Long's Expedition, ii, 302, No. 5.

Enchenopa antouina Walker, Brit. Mus. Homopt., ii, 488, No. 32.

Enchenopa venosa Walk., *E. densa* Walk., *E. frigida* Walk., *E. bimaculata* Walk., ib., ii, pp. 488-491.

Not uncommon in many parts of Colorado on the plains and foot-hills. I met with it in Denver, near Golden, near Colorado Springs, on small plants in low grounds, and also in the valley of the Arkansas near Cañon City in August. Dr. Packard obtained a specimen in the vicinity of Boulder on June 29.

PUBLILIA Stål.

P. modesta.

Publilia modesta Uhler, in Bull. U. S. Geol. Surv., ii, 78, No. 2.

Not abundant in any of the localities visited by me. I detected a few specimens in Clear Creek Cañon, August 6; at Colorado Springs and Manitou, August 17, and west of Denver, August 18; also at Pueblo, August 10.

CYRTOSIA Fitch.

C. fenestrata.

Cyrtosia fenestrata Fitch, Fourth Ann. Report, 49, No. 2.

A few specimens occurred to me while beating small oak-trees at Manitou, August 16.

Family CERCOPIDÆ.

APHROPHORA Germ.

A. quadrangularis.

Cercopis quadrangularis Say, Journ. Acad. Phila., iv, 335.

One specimen from the vicinity of Cañon City, and a few others from the region of irrigation west of Denver, August 6 to 17. Probably the scarcity of this insect may have been occasioned by the lateness of the season during which I was in the field. It is usually common in the places to which it attaches itself in its onward distribution.

PHILÆNUS Stål.

P. lineatus.

Cicada lineata Linn., Systema Naturæ [ed. 12], 709, No. 31.

Philænus lineatus Stål, Hemipt. Fabriciana, ii, 16, No. 2.

On the foot-hills near Golden, August 5. Doubtless it is widely distributed through the mountainous region of Colorado; but my period of collecting was probably too late in the season for the swarms in which it sometimes appears.

CLASTOPTERA Germ.

C. delicata.

Clastoptera delicata Uhler, in Bull. U. S. Geol. Surv., ii, 82.

I found only one specimen near Colorado Springs, while sweeping rank growths of plants in damp ground, on August 16.

Family FULGORIDÆ.

SCOLOPS Germ.

S. sulcipes.

Fulgora sulcipes Say, Jour. Acad. Phila., iv, 335.

Flata pungens Germ., Thon. Entom. Archiv., ii, p. 47, No. 11.

Captured on August 18, on low ground, in the suburbs of Denver.

CIXIUS Latr.

C. vicarius.

Cixius vicarius Walker, British Museum List Homopt., ii, 343, No. 22.

Originally described from Florida, but now known also from Massachusetts, Maryland, Texas. A few specimens occurred to me while sweeping the weeds in Western Denver on August 5. They were smaller than the specimens from Texas, and had the spots of the hemelytra much reduced in size.

STIROMA Fieb.

S. inconspicua, new sp.

Robust; vertex a little tumid, excavated each side and before the apex, sordid testaceous, marked with black. Front long and moderately narrow, almost parallel-sided, a little infuscated, the lateral keels prominent, piceous below the first third, the two central keels approximate, coalescing above, piceous; epistoma with the middle and lateral carinas and a slender stripe each side of the middle piceous; rostrum somewhat piceous. Eyes very moderately convex, longer than high, dark brown, margined with orange, the excavated inferior lobe yellowish-white. Pronotum dull testaceous, the disk posteriorly fuscous, minutely scabrous, with the central keel abbreviated anteriorly, and the lateral keels high, oblique, entire, a little infuscated; decurved sides orange, waved, acutely tapering, with the margins recurved. Mesonotum a little depressed, smooth, dull testaceous, tricarinate, the carinæ tinged with piceous. Legs pale yellowish, the fore and middle femora obsolete lined with fuscous; the tibiæ a little infuscated and with fuscous

spines; the apex of the last tarsal joint and the nails black-piceous. Mesopleuræ with the round indentation fuscous; the coxæ also a little fuscous. Hemelytra short, not reaching beyond the middle of the abdomen, broad, bluntly rounded behind, a little dusky, but paler exteriorly, on the base, disk, and posteriorly having some obscure, blackish, irregular cloudings, the nervures very distinct, those of the disk interrupted with piceous, and forking at tip; the apical margin a little thickened. Tergum dull ochereous, with the posterior margins of the segments black; venter spotted and marked with black.

Length $2\frac{1}{2}$ millimeters. Width of pronotum 1 millimeter.

It occurred in moderate abundance upon small bushes in Clear Creek Cañon August 6.

BRUCHOMORPHA Newm.

B. pallidipes.

Bruchomorpha pallidipes Stål, Novæ vel Minus Cognit. Homopt., Berlin. Ent. Zeit., vi, 309, No. 3.

One specimen, swept from plants on the plains near Colorado Springs, August 13.

This species has a less prolonged and acute head than *B. dorsata* Fitch, to which it is closely related. The length of the yellow vitta on the head, pronotum, and commissure of the hemelytra varies very much; and the legs are often rufo-piceous, with only the coxæ yellow.

Subfamily TETTIGONINÆ.

Ocelli placed on the vertex superiorly.

PROCONIA St. Farg. et Serv.

P. costalis.

Tettigonia costalis Fab. Ent. Syst., suppl., 516, Nos. 22-23.—Signoret, Annales Soc. Ent. France, 3d ser., ii, 359, pl. 12, fig. 8.

Widely distributed throughout the region of Colorado less remote from the foot-hills. It was extraordinarily numerous near Colorado Springs, upon low plants, August 13-17. On the low hills west of Denver, also near Golden and in Clear Creek Cañon, it was found less abundantly. In Manitou Park, a few specimens were taken from low plants. The nymph is odd-looking, pale brown, with three yellow stripes along its whole length. Dr. Packard collected a larval specimen at Boulder, June 29.

DIEDROCEPHALA Spin.

1. *D. mollipes.*

Tettigonia mollipes Say, Journ. Acad. Phila., vi, 312, No. 4.

Very abundant on grass and weeds in low spots near Denver and in the vicinity of Golden, August 5 and later in the month.

2. *D. noreboracensis.*

Aulacizes noreboracensis Fitch, Catal. Ins. N. Y. State Cabinet, 56, No. 2.

This is more particularly a foot-hill and mountain species. It occurred

to me in Clear Creek Cañon and at Golden, August 5-7. One specimen was taken west of Denver on August 9.

HELOCHARA Fitch.

H. communis.

Helochara communis Fitch, Ins. N. Y. State Cabinet, 56.

Very common in grassy marshy spots in the bed of the creek which passes through Denver, also in similar situations on the farms west of Denver. Some specimens were of larger size than usual. On the eastern side of the continent, it is common in damp meadows from Maine to Georgia. It is found also in Texas, and in my collection is a specimen from New Leon, Mexico. In Maryland, it sometimes swarms in the grass adjacent to brooks and streams, and occurs in two varieties, the less common one of which is mostly of a clear bright green.

TETTIGONIA Geoff.

T. hieroglyphica.

Tettigonia hieroglyphica Say, Journ. Acad. Phila., vi, 313, No. 6.

Common in many parts of Colorado. I swept it from plants in Beaver Brook Gulch, near Golden, in Denver, abundantly near Colorado Springs, at Manitou, and in Manitou Park, and less common near the mouth of the great cañon of the Arkansas.

GYPONA Germ.

1. *G. octolineata.*

Tettigonia octolineata Say, Journ. Acad. Phila., iv, 340, No. 1.

Gypsona striata Burm., Gen. Ins. Fam., v, No. 9.

Taken by beating bushes in Clear Creek Cañon, August 7; also at Denver; at Manitou, August 13; and in the mouth of the cañon of the Arkansas.

2. *G. cinerea*, new sp.

Aspect of *Philænus*, short, dark cinereous, more or less tinged with yellow. Head long-semilunate, angular at tip, and with the tip recurved, black; vertex flat, coarsely punctate with black, a little pubescent, impressed behind the apex generally with a short, impressed, longitudinal line, and each side with a longer one, or with simply indentations in their places; face irregularly dotted with piceous, and with a few punctures on the sides, the front convex transversely, more prominent above, triangularly impressed at base, sometimes with traces of transverse brown lines; cheeks broad, the outer ones oblique, a little expanded, and broadly rounded, very slenderly tapering on the apical half. Antennæ largely piceous, or banded with piceous. Pronotum transversely rugulose, pointed with fuscous, a little punctate anteriorly and near the sides, a transverse series of short, indented lines behind the forward margin, and with a bald patch in the place of callosities; lateral margins oblique, slanting beneath the middle of the eyes, the

edge narrowly recurved; propleuræ dotted with fuscous, the meso- and meta-pleuræ pale, a little tinged with piceous on the disks. Legs pale brownish, or dull testaceous, dotted with fuscous; the coxæ clouded with fuscous, and the femora and tibiæ more or less piceous on the upper face, and the latter sometimes also on the under face; tarsal joints either black beneath or at the apex or with the last joint; nails and pulvilli piceous. Scutellum short, acute, minutely rugulose and punctate at base and in patches, minutely dotted with fuscous at remote, unequal intervals. Hemelytra very broad, and with the costal margin more arcuated in the female than in the male, and with the cells shorter and more irregular; the nervules thick, prominent, margined each side, throughout, with fuscous, impressed punctures; the costal edge thickened, a little recurved, the submargin punctate with fuscous; apical cells longer and less oblique-sided in the female than in the male. Tergum more or less black, and the venter black basally, or with the disks only of the segments before the apex black, or with all the segments simply punctate with fuscous. The surface is generally invested with minute, prostrate, yellowish pubescence.

Length to tip of hemelytra 7-9 millimeters. Width of pronotum $2\frac{1}{2}$ -3 millimeters.

One specimen from near Manitou, August 13. Other specimens have been taken in Kansas, Utah, Illinois, and Connecticut.

PARAPHOLIS, new gen.

Aspect of *Eupelix* Burm., but with the head forming a more symmetrically rounded scale, and with the ocelli placed on the back of the vertex, a little in advance of the anterior line of the eyes. Head extremely depressed and thin, composing a disk which is a very little wider than long, with the sides obliquely rounded and meeting at tip almost in an angle; front very long-elliptical, very convex and prominent, with the adjoining fore part of the face correspondingly depressed; the outer cheeks narrow and long, sinuated exteriorly, and curving inwardly with an acutely angular tip; the inner cheeks small and very narrow, almost confined to the sides of the *epistoma*. Antennæ very short, stout at base, the two basal joints subequal, roundish, the third much narrower, conical, thence tapering and setaceous. Pronotum transverse, the latero-posterior sides long and sinuated; the middle of the posterior margin also angularly sinuated. Posterior lobe of the scutellum very long, narrow, and acuminate at tip. Hemelytra long, steep behind the base, wider posteriorly, the inner margin straight, and at tip slightly valvate, the costal margin broadly arcuated; nervules coarse and wide apart, the apical cells blunt, short and broad, five in number, the outer one triangular at base, the inner one oblique, subtrapezoidal; tip obliquely rounded.

P. peltata, new sp.

Pale green, elongate, flattened disk-like in front, and wedge-shaped

behind, closely sunken-punctate all over, excepting the sternum, tergum, and legs. Head very broad and long, flat, acutely long-lunate, the tip faintly turned up and subangulate, with an obsolete, slender, raised line running back to the base of the pronotum; edge sharp; punctures brown, and sometimes a brown streak along the middle; each side of middle with a short impressed line; front and cheeks a little tinged with brown, and with the punctures of the same color, the superior part of cheeks with finer uncolored punctures. Antennæ yellow at base, green at tip. Eyes oblong, dull brown, carinated behind. Pronotum flattened and uneven anteriorly, a little convex posteriorly, very coarsely and deeply, closely punctate, the punctures chiefly brown, each side of middle anteriorly a little impressed, and exterior to this a larger and deeper impression; lateral margins oblique and almost continuous with the arcuated, anterior margin; the latero-posterior margins sinuated and with a thickened edge, the outer angle almost rectangular; posterior margin concavely sinuated, and with the ends of the sinus broadly rounded. Scutellum irregularly and more finely punctate, the apex impunctate. Legs green, including the tarsi, finely dotted with brown; the pulvilli large and stout, as in *Gypona*. Hemelytra very coarsely, deeply, closely punctate, the punctures usually brown, placed in longitudinal series; nervures straight, a little wavy at tip. Tergum smooth; venter remotely and finely pointed with brown, and punctate.

Length to tip of hemelytra 6-9 millimeters. Width of pronotum 2-3 millimeters.

One specimen from Clear Creek Cañon, August 7. Inhabits also Texas, Mexico, Cuba, Hayti, Georgia, Massachusetts, and Maryland. In the latter State, I have swept it from Ferns in June, September, and October.

Subfamily JASSINÆ.

Ocelli placed on the front edge of the vertex near the eyes, or on the sides of the face below the front line of the vertex.

GLOSSOCRATUS Fieber.

1. *G. viridis*, new sp.

Bright apple-green, yellowish when faded, opaque, long and narrow; the edge of the head and outer margins of the pronotum and hemelytra whitish. Head shorter than usual, flat, shorter than wide, angularly long-lunate, the edge a little recurved; surface not apparently punctate, the middle line smooth, conspicuous chiefly at base; front broad and moderately convex, sometimes a little impressed immediately below the upper margin, and with a dark line concurrent with the margin; tip of rostrum piceous; eyes a little dusky; the ocelli placed very near them on the margin, pale yellowish. Pronotum transverse, almost flat, a little rounded down on the sides, somewhat indented and uneven anteriorly; the lateral margins recurved, oblique, a little curved, and almost continuous with the slightly arcuated anterior margin; posterior

broadly and very feebly concave; the postero-lateral margins short, a little oblique, the outer angle almost rectangular. Beneath and legs pale greenish; the tarsi and nails luteous or pale piceous. Hemelytra opaque, impunctate, narrow, the inner margin straight, very fully valvate at tip, where it is also thinner, almost transparent, and sometimes tinged with fulvous; the costal margin straight at base, but broadly arcuated posteriorly; the nervures straight and often of a slightly deeper green; the apical areoles short and small, sometimes nearly quadrangular, and the costal area occasionally with several oblique cross-nervures. End of the abdomen acutely tapering, sometimes rufous.

Length to tip of hemelytra 6-7 millimeters. Width of pronotum $1\frac{3}{4}$ - $2\frac{1}{4}$ millimeters.

Apparently a rare insect. One specimen was found near Golden, and a few others were taken on the highlands west of Denver. It has also been captured in Eastern Massachusetts, Connecticut, New York, Canada, and Illinois. It resembles *Gypona*, and is the *G. reverta* of my former list.

2. *G. lineatus*, new sp.

Pale green, broader than the preceding, with the head very flat, long, and longer than wide, with four slender, longitudinal, orange stripes, which extend also upon the pronotum and scutellum, and the nervures of the hemelytra also striped with orange. Head having the outline of a bishop's miter, but a little acute at tip, the margins reflexed; the surface obliquely indented each side, roundly indented each side near the base, and with a slender, longitudinal line along the middle; submargin of the face broadly flattened, the front convex, moderately broad, hardly rugulose; rostrum a little tinged with piceous. Pronotum very short, obsoletely rugulose; the sides a little obliquely widening anteriorly, margined with white, slightly decurved; anterior margin straight along the middle, but curving toward the sides; posterior margin a very little concave; the postero-lateral margins obliquely truncated, but almost continuous with the posterior margin. Scutellum short and wide, smooth. Legs green, the spines of the tibiae stout, yellow; incisures of the tarsi, and the nails reddish. Hemelytra shorter than the abdomen, straight, the costal margin almost parallel with the sutural one; nervures straight, destitute of straight cross-nervures; the apical areoles very small and confined to the tip of the membrane; the outer areole usually absent. Venter smooth, pale yellow, the ovipositor and valves more or less rufous; end of the body acutely tapering.

Length to tip of hemelytra 7-8 millimeters. Width of pronotum $2\frac{1}{4}$ - $2\frac{1}{2}$ millimeters.

Occurred to me in a few specimens upon the salt-marshes of the coast of New Jersey in August.

This and the two following species are introduced here to complete the series as thus far known in North America.

These beautiful insects are of great interest in the fauna of North America, recalling a group hitherto known only from Southern Russia and the East Indies. Although of a clear green color when fresh, they are apt to turn pale yellow after the lapse of a few weeks.

3. *G. vulneratus*, new sp.

Pale green; form of the preceding, depressed, the head long, very flat, not narrowed at base, but obliquely rounded anteriorly, and with the tip narrow, almost acute, and a little turned up; the vertex with an oblique, short, vermilion stripe each side, and with three longer ones on the pronotum; nervures of the hemelytra orange. Margins of the head reflexed; the submargin of the face very much flattened, the front moderately inflated, obsolete rugulose in chevrons; the under side of the head, the pectus, and the venter pale yellowish. Eyes brown. Antennæ and rostrum pale yellow. Pronotum transverse, short, of the same shape as in the preceding. Scutellum smooth, with three slender, longitudinal, orange stripes. Hemelytra shorter than the body, a little tapering posteriorly; the costal margin moderately arcuated; wings white. Abdomen smooth, a little infuscated at tip.

In two specimens, the head has an orange chevron exterior to the red lines and an orange line in the middle; and the pronotum has four orange lines.

Length to tip of hemelytra 7-8 millimeters. Width of pronotum $1\frac{1}{2}$ - $2\frac{1}{2}$ millimeters.

From Central Texas; collected by G. W. Belfrage.

4. *G. fenestratus*, new sp.

General form of the preceding; head very long and flat, but with the sides more narrowing toward the tip; color yellowish-green, the head with four slender, orange lines, and the pronotum with six, and the scutellum with four. Head more obliquely rounded than in the others, more acute at tip, the tip upturned; surface of the face a little uneven, the sides anteriorly less flattened than usual, the front inflated, a little flattened in the middle, and occupying most of the width of the face, pale yellowish-green, a little infuscated in front; antennæ and rostrum yellow. Pronotum as in *G. lineatus*, the sides oblique, narrowing toward the head, the margins recurved. Scutellum short and broad, smooth. Legs yellow, the posterior tibiæ blackish, with orange spines; tarsi blackish, with the joints margined with testaceous. Pectus orange. Hemelytra pale green and with orange nervures on the basal half, the posterior half whitish-hyaline, bounded behind and before by a broad blackish arc, the two bands connected on the costal margin by a black streak, and in the costal middle a transverse blackish streak runs inwardly; the costal margin a little arcuated; the sutural margin straight, tinged with fuscous; apical areoles large. Wings white. Metapleura and venter black, the posterior edges of the segments of the latter yel-

low; the anal segment of the male with tufts of fulvous bristles above and below.

Length to tip of hemelytra 6 millimeters. Width of pronotum 2 millimeters.

Thus far I have found it only once, on the salt-marshes of the New Jersey coast, in August.

BYTHOSCOPIUS Germ.

1. *B. pallidus*.

Idiocerus pallidus Fitch, Ins. N. Y. State Cabinet, 59, No. 5.

This species proved to be quite common in Clear Creek Cañon, also near the South Platte River and its tributaries near Denver, and at Manitou and Colorado Springs, chiefly upon willows, August 6 to 18.

2. *B. verticis*.

Jassus verticis Say, Journ. Acad. Phila., vi, 305, No. 6.

Found upon willows, at Denver, August 9 to 18.

3. *B. ramentosus*, new sp.

Form of *B. pallidus*, broader and more robust than *B. verticis*; pale testaceous, more or less clouded with rust-brown and fulvous. Head broad and short, fulvous above, yellow inferiorly; vertex with a round black spot each side and a smaller black dot each side interior to the ocelli; face sometimes irregularly marked with small brown spots and lines, those above being arranged transversely, and those below in a horseshoe arc; epistoma chestnut-brown, with the base and middle line testaceous; rostrum pale testaceous. Pronotum transverse, short, pale testaceous, with a chestnut-brown uneven cloud on the disk, leaving an abbreviated line of the ground-color along the middle; each side near the outer margins with a few brown patches; the posterior margin feebly sinuated, and the lateral margins very oblique and a little curved. Scutellum pale testaceous, a triangular black spot near each basal angle, and a blackish dot each side of the middle of the disk; the base and sides more or less fulvous. Beneath pale yellow, with two or more black spots on the center of the pleural pieces. Coxæ with a few traces of brown; femora and tibiæ with a few brown streaks; tarsi banded with brown, the nails and pulvilli piceous. Hemelytra pale testaceous, or even milky-white, the areoles and tips of the nervures pale brownish; costal and sutural margins and basal part of nervure pale; wings hyaline, faintly tinged with brown, the nervures fuscous.

Length to tip of hemelytra 5-5½ millimeters. Width of pronotum 1¾-2 millimeters.

On willows in the city of Denver; also in Clear Creek Cañon and at Manitou.

The upper surface of the head and the pronotum are frequently variegated with brown, fulvous, and yellow in areas of different sizes; and the face lacks the spots, or a portion of them, from the front and cheeks.

PACHYOPSIS, new gen.

Broad and robust; head from above very short, bluntly rounded, including the eyes a little wider than the pronotum, the vertex and front confounded in a common convexity in both diameters; ocelli on a line with the middle of the eyes, large, and placed remotely from each other; front short and broad, prominently and abruptly raised above the level of the cheeks and epistoma; epistoma flat, almost as wide as long, short and broad, the end truncated, and the sides a very little oblique, or very feebly sinuated; antennæ short, the basal joint short, very thick, rounded, the four following joints very short, narrow, tapering, the apical one with a short, oblique bristle; outer cheeks very broad, curving bluntly to concur with the tip of the epistoma; inner cheeks wider, a little longer than the epistoma, with the inner margin oblique and the outer margin curving inferiorly and making an acute tip. Pronotum transverse, of medium length; the posterior margin feebly concave, the postero-lateral margins oblique, with the angles a little rounded. Hemelytra moderately long, not valvate, narrowing toward the tip, the tip narrow and obliquely rounded; inner margin straight, and the costal margin broadly arcuated; nervures straight, the outer one acutely forked near the base, and its two branches each forking on the last third of the corium; apical cells short, the middle one shortest, quadrangular; the next outer one almost twice as long as the former; the next inner one widening posteriorly, and of the same length as the outer; the outer marginal apical cell much longer than the other, and showing a tendency to reticulation; the inner marginal apical cell a little longer than the one next outward, acute at tip. Anterior tibiæ with close, long bristles; posterior ones with long, stout spines.

1. *P. latus*, new sp.

Clear yellowish-green; contour somewhat like *Selenocephalus*. Head formed above of a narrow arc, its curve agreeing with the anterior curve of the pronotum; face bluntly convex; the surface minutely sericeous pubescent, very minutely rugulose; ocelli amber-yellow, large; antennæ pale yellow at base, a little dusky at tip; eyes brown, triangular, with the angles rounded. Pronotum transversely wrinkled, finely pubescent; the sides short, and with the edge slenderly recurved. Scutellum broad and short, a little scabrous, and feebly punctate on the base of disk; minutely pubescent. Beneath paler; legs yellowish-green, the under side of tarsi and the pulvilli and nails slightly piceous. Hemelytra translucent, pale greenish, slightly blackish pubescent, coarsely punctate in longitudinal series; nervures stout, those of the apical part of the costal area a little reticulated; costal nervure stout, recurved; the tip narrow, and obliquely rounded; wings hyaline, with the nervures scarcely discolored.

Length to tip of hemelytra 7 millimeters. Width of pronotum $2\frac{1}{4}$ millimeters.

It occurred at Manitou and near Cañon City, upon small bushes near water, August 11-16.

2. *P. robustus*, new sp.

Shorter and more robust than the preceding species, with a shorter and blunter vertex. Color pea-green, yellowish when faded. Face broad and short, the surface microscopically punctate and very minutely wrinkled across the whole width; cheeks broad, a little angular exteriorly, emarginated next the anterior coxæ; antennæ short, yellowish; eyes fuliginous; rostrum dusky at tip. Pronotum transverse, feebly convex, transversely wrinkled; the posterior margin a little concave; the lateral margins oblique, a little arcuated, with the edge recurved; the lateral angles triangular, a little rounded at tip; postero-lateral margin oblique, hardly sinuated. Legs pale green, with the sockets of the tibial spines, the apical margins of the tarsal joints, the nails, and pulvilli piceous. Scutellum transversely wrinkled, and with a transverse, arcuated, impressed line on the middle. Hemelytra beset with short, oblique, black bristles in the punctures all over the surface, the tip a little narrow, slightly infuscated within the margin; the nervures brighter green, the inner, bounding one, apically, oblique, angularly emarginated at base; the apical areoles short, the central one quadrangular; wings whitish. Tergum more or less orange on the disk; venter yellowish-green, set with remote, small punctures, and remotely pubescent, the tip with bundles of longer hairs.

Length to tip of venter 4 millimeters; to tip of hemelytra $4\frac{1}{2}$ millimeters. Width of pronotum 2 millimeters.

Inhabits New Mexico and Texas. Two fine specimens from Waco were sent to me by G. W. Belfrage.

The tegmina are thick and more opaque than in the delicate green *Gyponas*, and in this species rather more so than in the preceding one. The male is as yet unknown to me.

PEDIOPSIS Burm.

P. viridis.

Pediopsis viridis Fitch, Insects New York State Cabinet, 59.

One specimen from the willow, in Clear Creek Cañon, and another from the vicinity of Cañon City.

JASSUS Germar.

1. *J. irroratus*.

Jassus irroratus Say, Journ. Acad. Phila., vi, 308, No. 7.

Jassus testudinarius Burm., Genera Insect. Jassus, No. 4.

Common in most parts of the United States upon a great variety of plants and bushes. I secured specimens in the suburbs of Denver and in the valley of the Arkansas.

2. *J. excultus*, new sp.

Pale testaceous, marked and marbled with pale brown and fuscous,

very stout and short; aspect of *J. irroratus* Say, but much thicker and shorter. Head narrower than the pronotum, relatively to its width longer, and more acutely triangular than in *J. irroratus*, smooth and polished, the occipital margin with white, irregular patches, and each side of middle with a short, arcuated, or hooked black line; vertex each side posteriorly with a large patch of vermiculate or marbled fuscous lines, sometimes coalescing, the surface behind these a little depressed; each side of apex with a paler spot of brown lines; face irrorated and marbled with dark brown, sometimes omitting the middle line of the front and the disks of the cheeks; occasionally fuscous with remote testaceous dots; epistoma a little wider at tip, the base and sometimes each side marked with brown; rostrum piceous at tip. Pronotum broadly sublunate, much narrower anteriorly, transversely wrinkled, minutely punctate in a few places; generally with two brown, arcuated spots on the middle behind the head, the remaining surface inscribed with fuscous, sometimes also with ochreous in curved lines and marblings or dots, either of which may be obliterated or confused; lateral margins curvedly oblique, pale, recurved; the posterior margin a little concave; the lateral and postero-lateral angles rounded, the latter very bluntly so; the deflexed sides with a large black patch above. Epipleuræ and coxæ generally with more or less large black patches on the disks and superiorly. Legs pale testaceous or yellowish-white; the femora stout, the anterior and intermediate ones twice banded or clouded and dotted with brown; tibiæ, excepting the posterior pair, with four black abbreviated bands, the posterior pair with a large black spot at the base of each spine; tips of all the tibiæ, of the tarsal joints above, and the nails and pulvilli black. Scutellum short and broad, smooth, unevenly and irregularly marked and spotted with fuscous. Hemelytra pale testaceous or whitish, ramosely lined with fuscous, with fuscous nervures on the clavus, the other nervure pale brown, but darker posteriorly; the inner margin of clavus broadly wavyly pale, and marked with about three fuscous spots, of which the posterior one is placed on the apex; costal margin broadly curved, the nervure white, just inside of it is a series of small brown spots, reaching around the tip and becoming larger at that point; transverse nervules generally marked with branching brown spots; apical areoles short, with their lateral nervules curved; the areoles are sometimes so crowded with brown branching lines that the surface appears dark brown, and in such specimens pale dots are conspicuous in the spaces between. Wings milk-white, the nervures fuscous. Tergum black, the segments sometimes margined behind narrowly and on the sides broadly with testaceous, or sometimes bright yellow; venter generally black on the disk, the sides and apical segments dotted with fuscous; genital segment of the female beset with remote, pale, stout bristles.

Length to tip of venter 5-8 millimeters; to tip of hemelytra 6-8 millimeters. Width of pronotum $2\frac{1}{4}$ - $2\frac{3}{4}$ millimeters.

This is a most variable insect, of which I have received specimens from Florida, Georgia, Texas, Illinois, Massachusetts, Pennsylvania, New Jersey, New York, Minnesota, and Kansas. The largest specimens are found in Florida; those of Texas are not so large. I collected one specimen near Denver, August 18; it was of the small size, and pale in colors. Another specimen from Pueblo is smaller than either from the other localities, and has less of the fuscous marking upon the upper surface. In Maryland, it may occasionally be found sitting upon the oak-bushes in late summer and early autumn.

3. *J. jucundus*, new sp.

In form similar to *J. irroratus*, and like it with the head a little wider than the pronotum, white or yellowish-white, a little reticulated, and twice or thrice broadly clouded with brown across the hemelytra. Vertex lunate, hardly angular at the apex, but faintly ridged at that point, traversed by four faint brown clouds, or with a brown transverse line crossing nearly its whole width, a longitudinal line on the middle connecting with this behind a fainter one each side, also running back; the two outer spaces thus formed being occupied each by a brown oblong dot; the margin brown, and behind it four brown dots, of which the two central are near together, and the outer ones remote and transverse; eyes large, fuscous, margined with testaceous; front brown, marked with pale, transverse lines, or fuscous below and pale above; the outer cheeks a little angular exteriorly, broad, infuscated above, or clouded exteriorly and below; inner cheeks either brownish above or fuscous, excepting only the margins; tylus obliquely narrowing at base, the disk with a large piceous spot; antennæ long, slender, more or less fuscous beyond the base; sometimes the basal joint is fuscous above. Pronotum moderately long, bluntly lunate, concave behind; white or yellowish, transversely rugulose, marked nearly all over with brown, more or less confluent freckles, which omit the sides and sometimes the middle line; anterior margin each side convex and slanting down behind the eyes; lateral margins very short, curving down and forming a part of the curve of the anterior margin; latero-posterior margin long, oblique, with the inner angle not obtuse and a little rounded; the deflexed sides fuscous; pleural pieces yellow and orange, and each marked with a more or less large black spot. Scutellum yellowish, chestnut-brown each side, with four spots or lines of dark brown each side in contact with the lateral margin, a fuscous fusiform line on the middle; another transverse, and two round dots near the base; sometimes with a white streak in each basal angle, a larger spot each side and the tip whitish. Coxæ blackish at base, or they and the femora, excepting the knees, blue-black; anterior and intermediate femora with a black patch and oblique line on the inner face and with a streak of dots, a line, and a long spot on the outer face; tibiæ pale testaceous, marked with black dots at the base of the spines; the tip of tarsi piceous. Hem-

elytra milky-white, with a yellowish cloud at base, another behind the middle, and a third at tip; or with only a trace at base and a cloud from before the middle to the tip, or all these wanting; the nervures brown, darker at tip, the one between the clavus and corium testaceous or ochreous; transverse nervules of the costal area, a few ramose nervules on the disk and behind it, a macular open band before the middle, a similar one behind the middle, and some traces and an irregular circle at tip, together with broad margins of the nervures, dark brown; wings whitish, with brown nervures, and highly iridescent; the three apical areoles blunt and broad. Venter black at base, testaceous beyond, and rosy at tip, the valves being set with long, remote, stout, white bristles; tergum testaceous, black on the disk.

Length to tip of venter $4\frac{3}{4}$ – $5\frac{1}{2}$ millimeters; to tip of hemelytra $5\frac{1}{2}$ – $6\frac{1}{2}$ millimeters. Width of pronotum $1\frac{3}{4}$ –2 millimeters.

One specimen from Manitou, August 13; other specimens from Maryland, August 10, and from Texas.

The translucent hemelytra, with the clear brown marking in such strong contrast, give this species a very lively appearance, and signalize it as one of the most marked of its group.

4. *J. plutonius*, new sp.

Deep black, robust, the head a little more tumid and angular at tip than in the preceding species. Head, including the eyes, wider than the pronotum, black; the vertex triangularly lunate and a little tumid anteriorly; each side near the eyes with three dots, a dot at tip, a short line on the middle, anteriorly; four curved lines each side, the posterior margin, and the margin of the eyes orange; front prominent, obliquely declining, a little flat inferiorly, the transverse lines interrupted in the middle, orange, and with an orange geminate spot adjoining the ocellus, one a little lower down, a small one on the inner cheek, a large one on, and the margin of the outer cheek, the central line of the front, a spot at its tip, and a large spot each side of the base of tylus, orange; antennæ piceous, the base of the first joint yellow. Pronotum long-sublunate, moderately convex, convexly decurving each side, black, marbled, and flecked transversely, and slenderly margined with orange; the spots on the middle next the anterior margin and two or more each side of these larger; the lateral margin broadly orange, very short, and continuous with the anterior margin; the anterior margin convexly decurving beneath the eyes; the latero-posterior margin moderately long, a little oblique, arcuated, with the angles much rounded; the posterior margin almost straight; the decurved sides very short, black, contracted, and sinuated above. Mesopleura very large, the metapleura shorter, triangular, both black and margined with yellow. Coxæ black, partly margined with yellow; femora black, banded beyond the middle and at tip with testaceous; tibiæ pale testaceous, more or less clouded with piceous; tip of tarsi piceous. Scutellum black,

narrowly margined with orange. Postdorsalum and its side-pieces orange. Hemelytra blackish, the nervures and disks of the areoles whitish; membrane whitish, faintly tinged with dusky; the two outer areoles of the apex short, the next one inwardly long, widening gradually toward the tip, the inner one acutely triangular at tip. Wings hyaline, smoky at tip, highly iridescent, the nervures brown. Tergum and venter black, the apex and valves of the latter sprinkled with yellow, and beset with yellow stiff bristles; the penultimate segment of the female yellow each side, the posterior margin a little convex in the middle. Length to tip of venter 4 millimeters; tip of hemelytra 5 millimeters. Width of pronotum $1\frac{1}{4}$ millimeters.

One female from Clear Creek Cañon, August 6; others from Texas and Dakota.

5. *J. belli*, new sp.

Form of *J. letus* Uhl.; elongated, greenish-yellow; the head a little tumid, and, including the eyes, wider than the pronotum; vertex and face greenish-yellow, the former with a black transverse line on the middle, including a dot in the center and one at each end; front of vertex with two large, round, black dots placed transversely; front very moderately convex, slightly prominent superiorly, the bounding sutures and base of tylus black, the transverse lines brown; antennae yellowish; eyes large, pale brown. Pronotum short, sublunate, pale bluish-green, highly polished, the anterior margin convex, bordered with dark brown, the sides arching beneath the eyes; the lateral margin very short and a little deflexed; the postero-lateral margin forming hardly more than a continuation of the curve of the posterior margin; deflexed sides short, of almost equal width throughout. Sternum and pleuræ black, the latter margined with yellow. Legs pale testaceous, the spines ochreous, and the tips of the tarsal joints and the nails and end of tibiæ pale piceous. Scutellum yellowish, the base with a transverse black line, and the middle with a brown T. Hemelytra greenish-yellow, the nervures straight, yellow; suture of the outer boundary of the clavus pale brown; the three areoles of the clavus with a brown streak at the sutural end, and a longer brown streak runs from near the base of the corium to beyond its middle; apical margin a little brownish, the areoles long and wide, the central one narrowest. Wings whitish, a little smoky at tip, and with brown nervures. Tergum black, excepting the outer margin and the posterior margins of the last two segments, which are yellow; venter yellow, black at base and in the marginal sutures of the genital segment and ovipositor; apex of the penultimate ventral segment deeply and widely incised and tinged with brown, with the side-lobes oblique and a little arcuated. ♀.

Length to tip of venter $3\frac{1}{2}$ millimeters; to tip of hemelytra 5 millimeters. Width of pronotum $1\frac{1}{4}$ millimeters.

One female specimen from Manitou.

Named in kindly remembrance of Dr. William Bell, and of his courtesies to me at Manitou, Colo.

6. *J. divisus*, new sp.

Chiefly black, ground-color of head and pronotum yellow, hemelytra hyaline, with two or three dusky bands across them. Head a little tumid, including the eyes, wider than the pronotum; vertex moderately long, bluntly rounded in front, yellow, with a transverse, quadrangular black spot anteriorly, which is divided in the middle, and sends a short, slender branch along the inner margin of the eye; each side posteriorly is a round, black dot; sometimes the black spot is broken into four smaller ones; face yellow, with a black stripe running down the middle to the tip of the tylus, expanded in the center; each side with a series of lines, and across the tip of the front a broad band; inner cheeks broadly margined all round, a spot beneath the eye and the depressed sutures black; antennæ piceous, occasionally banded at base with yellow. Eyes pale brown, set on a yellow base. Pronotum transverse, moderately flat, transversely rugulose, pale yellow, with two oblique blackish streaks on the middle, which converge anteriorly and touch two transverse, small, black spots; the stripes are occasionally straight, and widened posteriorly; the two spots are usually indented; the posterior margin almost truncated; the anterior margin broadly arcuated, a little curved downward on the sides anteriorly; latero-posterior margins absent, but the lateral margin straight, leaving the posterior angle rectangular, a little rounded; deflexed sides very narrow, sinuated, black inferiorly; pleural pieces black, partly margined behind with yellow. Coxæ yellow, generally clouded with blackish; femora lineated exteriorly with blackish; the tibiæ yellow, anterior and intermediate ones lineated with blackish, and the posterior ones with black dots at the bases of the piceous spines; tarsal joints tipped with black, and with the nails and pulvilli of the same color. Scutellum yellow, broadly black at base, and on the middle is a quadrangular, black line, which is bilobed on its posterior boundary. Hemelytra dusky hyaline, a little brownish at base and on the suture, apical margin of the corium, and apex of the clavus; before the middle is an angular double spot, running backward slenderly, and behind the middle a broad, incomplete band of two or three spots; nervures pale yellow, brown at tip; inner nervure of the clavus usually yellow, with a brown interruption at base and another at tip. Wings hyaline, the nervures a little brown near the tip. Tergum black, margined with yellow each side, and on the two segments preceding the tip, and the tip itself yellow; venter yellow, black at base, and sometimes on the middle of the posterior segments; the apical segment more or less ocherous.

Length to the tip of abdomen $2\frac{3}{4}$ -3 millimeters; to tip of hemelytra $3\frac{3}{4}$ - $4\frac{1}{2}$ millimeters. Width of pronotum 1 - $1\frac{1}{4}$ millimeters.

Abundant upon low herbage in damp fields at Denver, and near Sloan's Lake, west of Denver, August 17. One specimen has the hemelytra dusky yellow and without markings.

7. *J. latus*.

Jassus latus Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 94.

One specimen from the mountains near Beaver Brook, August 6.

PLATYMETOPIUS Burm.

P. acutus.

Jassus acutus Say, Journ. Acad. Phila., vi, 306, No. 2.

One specimen from near Manitou, August 13, swept from herbage near the Fountain Creek. It is very common in the Atlantic region, being found from Boston, Mass., as far as to the Saint John's River, Florida. A single specimen is in a bottle of my specimens from Utah, near Salt Lake.

DELTOCEPHALUS Burm.

D. argenteolus, new sp.

Form very similar to that of *Athysanus stylatus* Boh.; hemelytra very short, truncated, not reaching beyond the second abdominal segment; color bluish-green, silvered. Head short-conical, green, the vertex indented just behind the tip, the basal surface a little depressed; face paler, the front showing traces of faint, transverse lines; antennæ dusky, paler at base. Pronotum bluish-green, highly polished, short, much arcuated anteriorly, minutely transversely wrinkled; the lateral margins oblique, a little thickened; the deflexed sides depressed, bluish-white, crossed by two slender, black lines. Legs yellowish-green; coxæ a little clouded with black; femora faintly streaked with black on one or both faces, the outer face of the middle pair also twice banded with blackish; tibiæ usually a little streaked with blackish, but the posterior pair has a strong blackish line on the inner face. Sternum and pleural pieces black, the latter more or less margined with yellow, superiorly with a broad, pale vitta. Scutellum minutely rugulose, uniform bluish-green. Hemelytra short, almost truncated, bluish-green, tinged with silvery, coarsely punctate in oblique series, the nervures indistinct and the apical cells obliterated. Tergum elegant bluish-green, highly silvered, black at base; the penultimate segment margined on the sides posteriorly and on the posterior margin, the base of the last segment, and a transverse line of dots on each segment (on the last segment with only two dots) black; venter green, black on the base and along the disk as far as the ovipositor, a blackish dot on the center of each segment of the connexivum; sides of anal valves whitish-green, a little clouded or streaked with fuscous; the ovipositor and its sheath produced very much beyond the end of the abdomen, ochereous-tinged

with rufous, a little black at tip; the ventral segment at base of ovipositor emarginated in the middle, the side-pieces valvular, arcuated.

Length to tip of ovipositor 4-4½ millimeters; to tip of abdomen 3-3½ millimeters. Width of pronotum 1 full millimeter.

One female has the hemelytra fully developed, reaching to the end of the abdomen, with the nervures moderately straight and the cells long; the posterior edges of the segments on the tergum black. No males were seen or captured. Quite common upon willows at Colorado Springs and near Manitou.

The above description was taken from the fresh specimens. Shortly after death, the clear colors are lost, and then the insect appears soiled-yellow, with the black markings distinct, and the ovipositor reddish-ocherous.

Several other species of *Jassinæ* were collected at Colorado Springs, Denver, and Manitou, but they are too much changed to admit of accurate definition. Descriptions of them can readily be given hereafter when fresh specimens are procured. Work in this field of research is liable to be mixed with error unless the specimens are obtained in full series of both sexes, the colors noted when the insects are alive, and then carefully preserved, all of which demands much time, as well as skill and attention.

TYPHLOCYBA Germ.

T. aureo-viridis, new sp.

Long and slender, vivid yellowish-green, the hemelytra translucent, exquisite golden-green, faintly blackish on the apical margin. Head broad, hardly tumid, sublunate, wider than the pronotum, rich yellowish-green on the vertex and front; the latter with a pale stripe down the middle, and a short one on the inner margin next the eye; cheeks deeper green; eyes narrow, as seen from above; antennæ long, pale green at base, fuscous beyond. Pronotum smooth, yellowish-green, moderately long, arcuated in front, and a little convex; each side and middle just behind the head with a pale round spot; lateral margins hardly reflexed, slightly prominent, a little obliquely arcuated. Beneath and legs green, the nails and pulvilli black. Scutellum with a broad, paler green line along the middle. Hemelytra narrow, yellowish-green, golden; the apex with four cells, of which the middle one is long, narrow, and almost straight, the two outer ones triangular, and the one next outside of the middle obtriangular. Wings hyaline, highly iridescent, and with a bright golden tinge. Ovipositor projecting beyond the long valvular genital segment.

Length to tip of ovipositor 3-4 millimeters; to tip of hemelytra 5-5½ millimeters. Width of pronotum 1½ millimeters.

This brightest of our green Typhlocybas was found in large numbers at Denver and in Clear Creek Cañon, upon the leaves of willows August 7 to 18.

PSYLLIDÆ.

Several species were swept from plants and bushes in the vicinity of Colorado Springs; but they have been too much altered in appearance to admit of description.

APHIDÆ.

Aphis, and other genera closely allied, were common upon many kinds of plants and bushes wherever I went in Colorado. The specimens, however, are too much shriveled and changed to admit of correct description.

[*To be continued.*]